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No. 2429.

AUGUST 28, 1926.

Vol. CV.

PACKED DRUGS WITH THE PHARMACIST'S OWN NAME AND ADDRESS

REAP the benefit of our experience and exceptional facilities for manufacturing and packing. The products are notable examples of pharmaceutical excellence, and are packed in a variety of elegant and distinctive styles. Special attention is paid to designing and printing the labels and to inserting the customer's own name and address in an artistic manner. Each package has had that finishing touch which is appreciated so much by the public and reflects credit on the retailer.

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£ £ Special Quotations and Samples on request. £ £
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in the new non-spilling gilt pocket case

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each capable of creating its own demand, if shown in

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The prettiest Opal pot pack you have ever seen.

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A "Winner" from the first Display.

Every formula perfect, every package a pleasure to handle, and every Display a sales maker.

Some Chemists wire, others write, for the Samples of every new Line we announce. It would pay you to examine our Products and methods more closely.

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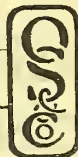
COMING EVENTS

THE nights are drawing in already, and most holiday makers will be back very shortly—some of them refreshed and some of them exhausted.

Now is the 'Roboleine' season about to begin, and as the national advertising has proceeded all through the Summer, the logical thing to do is to make an early start by display and recommendation.

Then will the harvest be greater than any other season you have ever experienced. Remember that we tell millions of people weekly that they should go to their chemists for 'Roboleine.' It is for you to consummate the sale.

OPPENHEIMER, SON & COMPANY LTD.
179 Queen Victoria Street, London E.C. 4.



Products of Quality

MALT EXTRACT WITH Cod Liver Oil AND PLAIN MALT EXTRACT

TESTIMONY.

One Pharmacist writes :

"We are duly in receipt of your sample Malt and Oil. There is only one thing to say about it. It is perfect. Please book contract B to be drawn upon when required."

EXPERIENCE proves beyond doubt that the strictest attention to QUALITY establishes a high reputation and is the prime factor in determining the permanent success of any commodity. As a Pharmacist your turnover in Malt Extract with Cod Liver Oil is a matter of considerable importance to your business, so that to you QUALITY has a very real meaning.

Being one of the largest manufacturers in the world of Malt Extract we can rightly claim to possess exceptional facilities for supplying your requirements in Malt Extract with Cod Liver Oil and/or plain Malt Extract. Only the finest English Barley Malt and the purest Norwegian Cod Liver Oil are used by us.

Manufacture takes place at our model factories, which are located in the beautiful country district of King's Langley, Herts. All our machinery is of the very latest type. Our staff of qualified chemists are completely versed in the technique of manufacture, and each output is analysed to ensure purity and activity of the ingredients and correct standardisation.

Our distinctive labels are artistic and dignified, and the complete range provides a charming variety suitable to all tastes. The service we render in showcards, background material, also selling leaflets bearing your own name and address, is we believe unequalled.

Do not place your business elsewhere until you have obtained our samples and prices, which compare favourably with any on the market.

Your enquiries are earnestly solicited. We know we can satisfy the most exacting need.

A. WANDER Ltd.,

Manufacturing Chemists and Makers of "Ovaltine"
Tonic Food Beverage, etc.

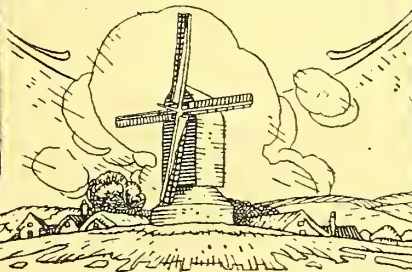
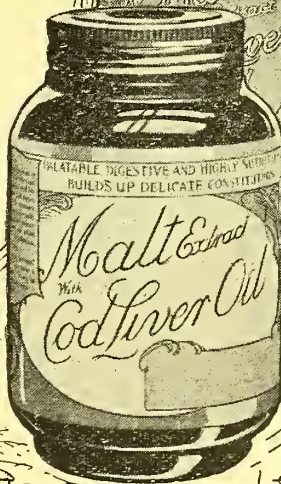
184 QUEEN'S GATE, LONDON, S.W. 7

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TESTIMONY.

Another remarks as follows :

"I would like to add that your Malt Extract with Cod Liver Oil pleases my customers better than any I have had hitherto."





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ONLY fresh plants grown on the Company's farms in Suffolk are used for the preparation of "StaffAllenS" Green Extracts. Because of their consistently high standard of quality they are invariably the choice of careful buyers. Ext. Belladonnæ Viride P.B. 1898, Ext. Hyoscyami Viride P.B. 1898, Ext. Hyoscyami 1st year. Write for prices. Stafford Allen & Sons, Ltd., Manufacturing Chemists, London.

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GREEN EXTRACTS



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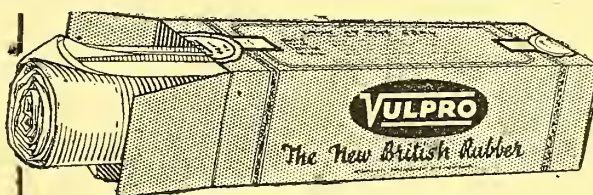
New Lines that pay Big Profits

Vulpro rubber is produced by an entirely new process which makes articles made from it the best of their kind on the market to-day. Here are two Vulpro lines that have proved to be good profit earners.

Vulpro Sponge Bags

These sponge bags are splendidly made in a variety of gay designs and attractive colours. They are absolutely waterproof; they have no rubber smell; they cannot crack, peel or perish; they are wonderful value for money.

Two dozen sponge bags in three different sizes and packed in the attractive showcard box illustrated here costs you only 27/-, leaving an ample margin for profit.



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is different from any other kind. It cannot crack or peel; it has no smell, no cold clammy feel; it can be sterilised in boiling water; it can be sewn and machined like cloth. Packed in sealed orange-coloured boxes in various weights and in lengths of 1, 1½ and 2 yards it retails for 5/- a yard (40-42" wide) or 4/- a yard (36" wide).

Put in a stock to-day and see how quickly it sells.

VULTEX PRODUCTS LTD., GENERAL BUILDINGS, ALDWYCH, LONDON, W.C.2

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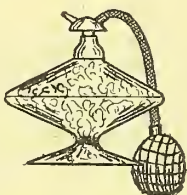
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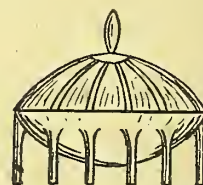
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PUFF BOWLS, PERFUME SPRAYS, Etc.

ARE DISTINGUISHED BY THAT TOUCH OF ORIGINALITY AND TONE WHICH GIVES ADDED PRESTIGE TO THE RETAILER WHO IS FORTUNATE ENOUGH TO HANDLE THEM.



Spurway
CANNES - GRASSE LTD.



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Protect yourself and your clients

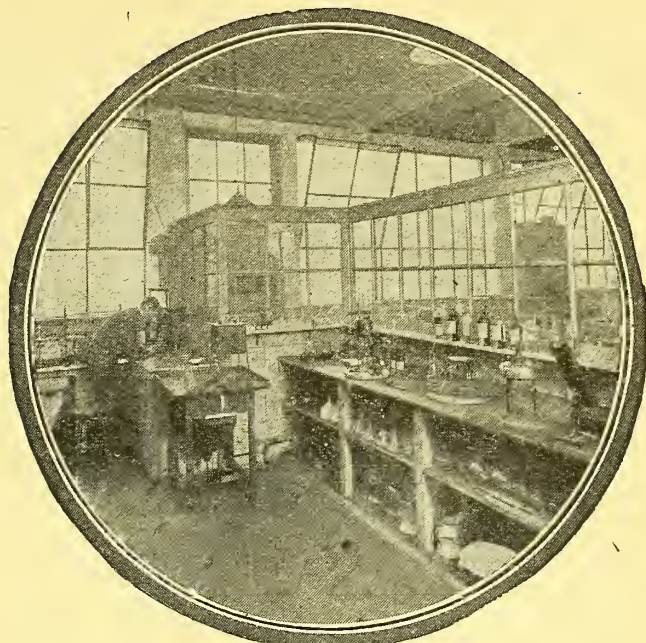
YOUR safeguard when ordering Medicinal Paraffin is to specify "Specialty" Liquid Paraffin B.P. .890, supplied only by us. None other is so pure—so highly refined—or will ensure such complete satisfaction.

There are definite reasons for this:

The manufacturing and standardising of this product has occupied our serious attention through years of special research, resulting in a product attaining the highest standard of purity—exceeding that of the British Pharmacopœia—and it **never varies**.

Every stage in the production of "Specialty" Liquid Paraffin is subject to the strictest analytical control.

You cannot afford to supply Liquid Paraffin which is inferior and unreliable—although, perhaps, it may be slightly cheaper—**build up your prestige on the best**.



A Corner of the Analytical and Control Dept of 'Semprolia' Works, London.



Specialty
Liquid Paraffin
is the best procurable

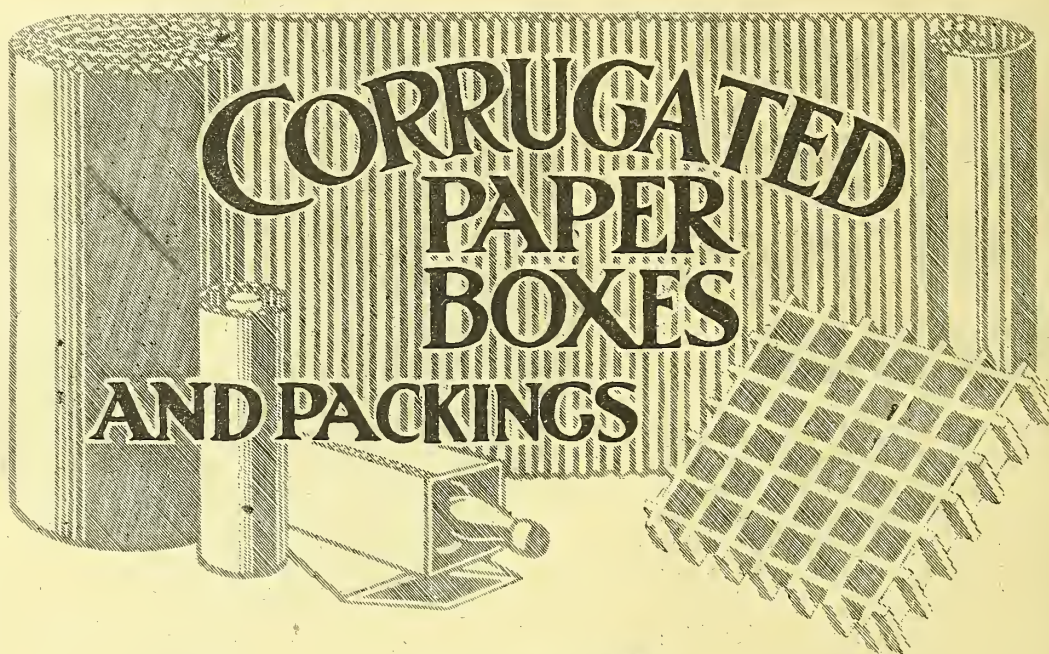


A convenient filler is supplied free which makes filling from the "Specialty" container simple and clean. It fits both the 5-gallon and the 2-gallon containers.

Send for Samples and Prices.

ANGLO-AMERICAN OIL CO. LTD.
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Corrugated Paper in
Boxes, Pieces, Partitions,
Cartons, Bottle Wrappers.

Large variety of Colours

FOR ALL PURPOSES

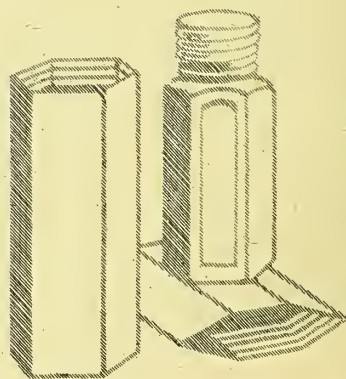
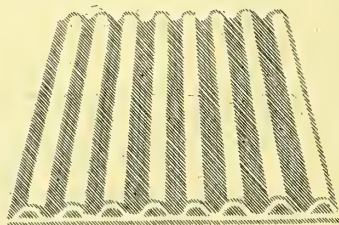
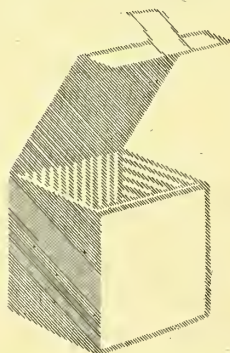
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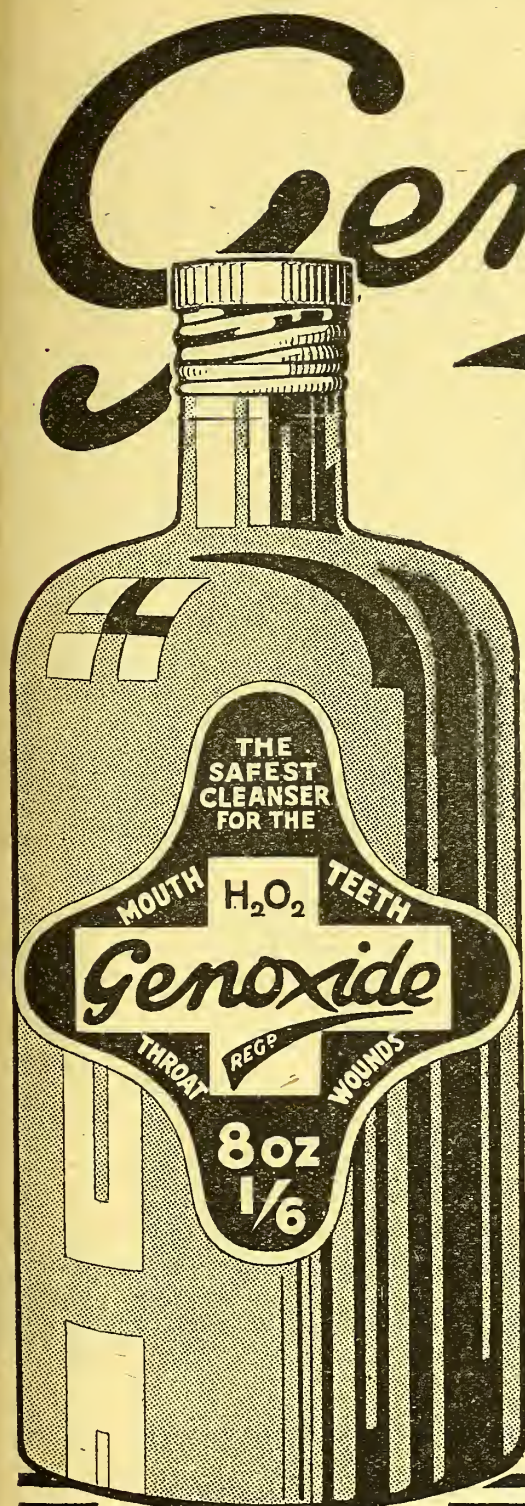
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*Corrugated Packing
Materials Co., Ltd.*

*4, Ambrose St.,
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IF we can assist you in your packing problems our long and varied experience is gladly at your disposal. A large and well-organised Works enables us to quote keenly competitive prices, whilst the quality of our products is unvarying. Ask us for Samples and Prices.





Genoxide

THE NEW (12 VOLS) PEROXIDE

Exceptional Stability
and Purity

NO RISK IN STORAGE

Patented Safety Screw Caps

Three Sizes Popular Prices

	PUBLIC PRICE	COST PRICE
4 oz. - 1/-	at 8/-	per doz.
8 oz. - 1/6	at 12/-	„
16 oz. - 2/6	at 20/-	„

Orders equivalent to three dozen 4 oz. less 2½%

Orders equivalent to one gross 4 oz. less 5%

Terms Cash in 30 days net.

Minimum One Dozen Lots.

COUNTER STANDS SUPPLIED.

SPECIAL TERMS TO WHOLESALERS.

GENOXIDE LTD - LUTON

SPECIAL BONUS OFFER

Until Sept. 30
1926.

Until Sept. 30
1926.



TWO QUESTIONS

?

ARE YOU SATISFIED that the Remedy YOU re-commend has BY RESULTS (that is important) proved itself to be THE BEST OF ALL CURES FOR INFLUENZA?

?

ARE YOU SATISFIED with the PROFIT and SALES your Remedy returns?

||

IF YOUR ANSWER TO EITHER OF THESE QUESTIONS IS IN THE NEGATIVE, WRITE the WORD "INFLUENZA" on a POST CARD and POST IT TO **SOUTHALL'S SPECIALITY DEPARTMENT, BIRMINGHAM** WHEN YOU WILL RECEIVE BY RETURN FULL PARTICULARS OF

||

A SPECIAL BONUS OFFER VALUE 7/6

RECOMMEND THE INFLUENZA MIXTURE WHICH DOES CURE AND SHOWS YOU A PROFIT OF **108.3%**

SOUTHALL BROTHERS & BARCLAY LIMITED
PACKED GOODS SPECIALISTS - BIRMINGHAM

Maw's



Page

Make a Window Show of Maw's Lysol.

That is one of the strong points of Maw's Lysol; it is packed and presented in such an attractive way that it is worthy of prominent display in your window or on your counter. Maw's Lysol, in fact, lifts Lysol out of the class of goods which have to be kept in the background, and for which nothing much can be done to stimulate sales, into the front rank of those goods which can be brought frequently to the attention of your customers in a manner which will create a favourable impression and a ready demand.

The bottle, the label, the carton, the enclosure leaflet and the showcard all help to tell your customers that Maw's Lysol is an entirely dependable article—up to the usual Maw's standard of quality. They are all powerful selling factors.



Maw's Lysol will give you the satisfaction of selling a first-class article, the satisfaction of pleasing your customers, the satisfaction of making a good profit on each sale, and the satisfaction of turning over your stock speedily.

Prices :

4 oz., in carton, per dozen	7/-	16 oz., without carton, per dozen ..	20/-
8 oz., in carton, per dozen	12/-	32 oz., without carton, per dozen ..	32/-

An extra discount of 5% will be allowed on orders for 6 dozen bottles—any size, or assorted.

S. Maw, Son & Sons, Ltd.,
Aldersgate St., London,
and Barnet.



ELEGANT SHOW BOX FREE
ON APPLICATION.



Original Green Bottles.
ACTUAL SIZE OF
STANDARD PACKING.

Frozoclone

REGD.

THE ORIGINAL Solid Eau de Cologne

It's quality that counts, and
FROZOCLONE is the standard.

Imitated but not equalled.

IN TWO SIZES. Retail: 3/6 and 1/10.
Wholesale Prices: 32/- and 16/- doz.

ON THE P.A.T.A.

SPECIAL TERMS FOR EXPORT.

R. DEMUTH'S LABORATORIES
68 SALUSBURY ROAD, and
MONTROSE AVENUE, LONDON, N.W.6



ACTUAL SIZE OF
NEW SMALLER PACKING.

The World's Best Hairbrush

means quicker sales and
bigger profits for you

Why? Because it has more selling points than any other brush in the world. Because it meets to a greater degree than all others the modern woman's need for deep, penetrating hairbrushing plus absolute cleanliness.

Consider for a moment the strength and toughness of the bristles and the resiliency of the rubber pad in which they are set. Is there any other brush more capable of getting right down to the roots of the hair than the "Klenly" Brush? Consider also the tempting beauty of the various colours and designs.

And this is not all. Both the bristles and the pneumatic pad are white. Because of this the brush is always kept clean; its whiteness instantly betrays any dirt or dust that may come from the hair. The air vent, too, is placed in such a position that it's the easiest thing in the world to clean the brush.

These then are the reasons why you should stock the "Klenly" Hairbrush—why you should take your share of the extra-generous margin of profit that we as the actual manufacturers can afford to allow you.



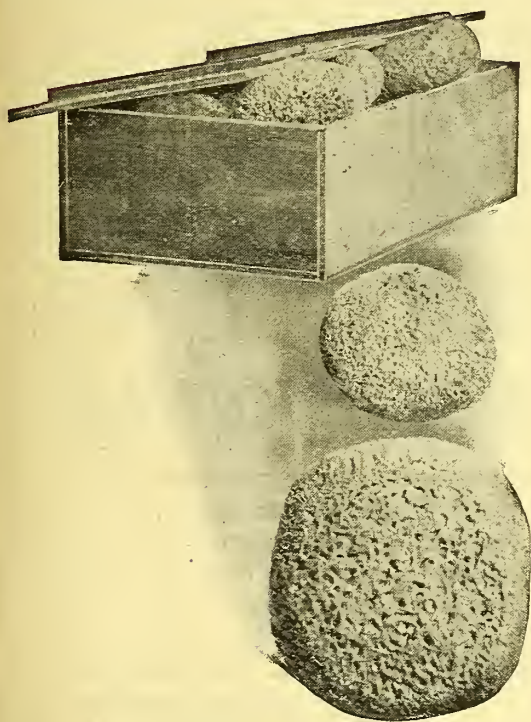
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28928/24

RIGBY'S Klenly HAIR BRUSH

RIGBY, BATTCOCK LTD., 28 MUSEUM STREET, LONDON, W.C.2.
Protected in U.S.A., CANADA and FRANCE.

Write at once for special folder giving full details and prices of the various designs and see for yourself what attractive opportunities the "Klenly" Brush affords for profitable business.

We Specialise in Sponges!



THE handling of Sponges is a business of its own, and yet will make or mar a pharmacist's reputation.

Why?

Because, firstly, a good sponge runs into money, and secondly, everybody is interested in it—mother chooses it, the family use it, and father pays for it.

But sponge selection requires much time and careful discrimination, and the busy pharmacist is well advised in placing himself in the hands of the Sponge Specialist.

We specialise in Sponges.

May we make a selection for you from the large stock of Best Grade Sponges that we carry?

We particularly recommend our
£5 10 assortment ranging
from 6d. to 21s. each,
which we are offering at £5,
:: less 2½%, cases free. ::

Evans

EVANS SONS LESCHER & WEBB, LTD.
LIVERPOOL New York LONDON



Keep your business young

IT'S a fine thing to know that your customers have remained loyal to you year after year as your Business has grown. But as your older customers' tastes and requirements alter in the passage of years, it's a dangerous thing to let your Business grow old with them. Keep your Business young—don't overlook the requirements of Youth—let your Business be not a day older in spirit than your youngest customer.



Just the thing for Summer Frocks and Dainty Lingerie.

Good trade should be done in this line now by recommending it for this purpose to your customers. Recognised as the finest cold water dyes in the world for delicate and costly fabrics. Good results obtained even at the first trial. A certain seller.

'LUTON'
HOT WATER FABRIC
DYES

The best hot-water dyes for all materials, giving perfect results with the minimum of trouble. As with all other Whitaker products, they show a good profit.

LUTON STRAW HAT DYES and AURORAL COLD WATER DYES with their gay colours and possibilities have an irresistible appeal for Youth. Keep a good stock of them—give them a good show—let Youth know that *you* know and sell what Youth requires.

'LUTON'
STRAW HAT DYES

The outcome of 45 years' accumulated experience in the manufacture of household dyes. This series comprises all colours and is in demand practically all the year round. They are all highly efficient dyes and appeal to every woman on economical as well as fashionable grounds. Supplied in dull or glossy series.

VELT
THE NEW CLEANER

A cleaning preparation for removing stains, grease, dirt, etc., from clothing, upholstery, curtains, etc., and renovating them. VELT is a non-inflammable liquid and is supplied in screw tins of which three dozens are contained in an attractive outer. A new Whitaker product, but nevertheless one which is already selling well. It is now available in 3-oz., 10-oz., and 20-oz. tins for the convenience of bigger users.

ALL CASES AND CONTAINERS FREE.

WHITAKER & CO. Dye Specialists for Chemists, **KENDAL**

Telegrams: "Dullette, Kendal." • (Established 1878.)

Telephone 214.

London Office and Showrooms: **16—18 Beak Street, REGENT STREET, W.1.**



YOU RECOMMEND WOOLLEY'S LYSOL WITH CONFIDENCE AND ENTHUSIASM

WOOLLEY'S LYSOL is a powerful Antiseptic Disinfectant, containing 50% of active Cresols; it is practically free from Carbolic Acid, but as a Bactericide it is fully $2\frac{1}{2}$ times as strong.

It is soluble in all proportions in water, forming a clear Disinfectant Fluid, which does not attack the tissues nor cause smarting.

It is penetrating, deodorant, does not corrode instruments and is not destructive to clothing. Diluted with water Woolley's LYSOL forms a soothing and healing lotion. Being concentrated it is economical and inexpensive, and its great value is recognised by medical men all over the country.

You can Recommend it with Confidence
Because:

- 1.—Woolley's Lysol can be used under all circumstances where a safe but effective disinfectant is required.
- 2.—It gives an incomparable return to the retailer and satisfaction to the customer.



PRICES	4 oz.	8 oz.	16 oz.	32 oz.	$\frac{1}{2}$ gall.	1 g. ll.
	1/0	1/9	3/0	4/9	7/6	12/6 retail
	7/0	12/0	20/0	32/6	60/0	99/0 per dozen
	6/6	11/0	18/6	30/0	2 gross 1/0 size or equivalent	

Carriage Paid on £5 orders.

JAMES WOOLLEY, SONS & Co., Ltd.
MANUFACTURING CHEMISTS, MANCHESTER

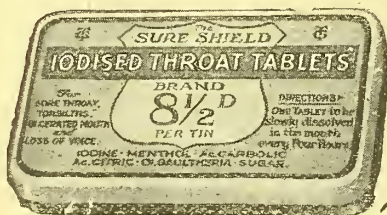
LONDON DEPOT :
1 SWAN STREET,
MINORIES, E.1

Telephone : AVENUE 6255.

THE SURE SHIELD



IODISED THROAT TABLETS



8 1/2 d. Tins

5/6 per doz. 63/- per gross

1s. 3d. Tins

9/6 per doz.

108/- per gross

THOS. GUEST & CO., LTD., CARRUTHERS STREET,
ANCOATS, MANCHESTER.

LOSALL'S SALT

SELLS FREELY AND READILY.

PAYS 50% ON OUTLAY.

An infallible remedy for

Gout
Rheumatism
Eczema & Skin
Affections

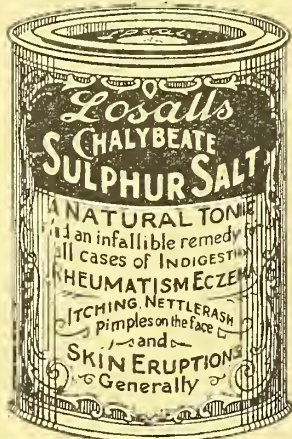
P.A.T.A. doz.
net

4 oz. tins 1/-, 8/-

8 oz. ,, 1/9, 14/-

Bottles 2/6, 20/-

Attractive advertising
matter supplied on
application.



SOLD EVERYWHERE.

Manufactured by

LOFTHOUSE & SALTMER, Ltd.
HULL.



BRAND'S ESSENCE

of Beef, Mutton or Chicken
consists solely of the juice of
the finest meats, prepared
with the greatest care under
the most hygienic conditions.

Essential in the Sick Room.

Sold by all Chemists and Stores.

BRAND & CO., LTD.

Mayfair Works, Vauxhall, LONDON, S.W.8.

RELIEVES
COLDS

PREVENTS
"FLU"

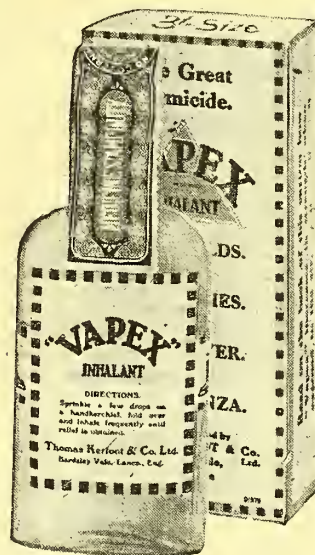


Recommend the 3/- Size

It is to be preferred to the 2/- size for the following reasons :-

- (1) It gives a 50% increase in turnover as compared with the 2/- size.
- (2) It yields a minimum protected profit of 9d. per sale.
- (3) Owing to the stamp being of the same denomination in each case, the 3/- size gives the better value.

When you are asked for "a bottle of 'Vapex'" may we suggest that you do not enquire which size is desired but proffer a 3/- bottle as a matter of course. It will be to the advantage both of your customer and of yourself.



TRADE PRICES

2/- size	P.A.T.A. (Stamped)	.. ..	18/6 dozen
3/- size	P.A.T.A. "	.. ..	27/6 dozen
12/- size	.. ..	.. ..	9/- each

THOMAS KERFOOT & CO. LTD.
BARDSLEY VALE, LANCASHIRE,
& Bardsley House, London, N.1
ESTABLISHED 1797.

B/402

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Season—1926



COD LIVER OIL

GUARANTEED GENUINE. FINEST PURE LOFOTEN.

Manufacturers :

BRÖDR. AARSÆTHER A/S, Aalesund, Norway.

LARGEST MANUFACTURERS OF COD LIVER OIL IN NORWAY.

Stocks always held in London:

In 25-gallon tin-lined barrels.

SOLE AGENTS
FOR U.K.:

FREUDENTHEIL, SMITH & CO.

21 Mincing Lane, LONDON, E.C.3.

Tel. Add. : "FREUDENRUF."

Codes used : A B C, 4th and 5th Edit. ; and Private.

Tel.: ROYAL 6600.

1926

MARTEN'S

1927

COD LIVER OIL

FINEST NORWEGIAN MEDICINAL QUALITY, B.P.

STEAM-REFINED. NON-CONGEALING. BRILLIANT. GOOD TASTE. EXCELLENT
APPEARANCE. Also VETERINARY QUALITY.

Sole Consignees in the
United Kingdom :

FRED^K BOEHM, LIMITED

17 JEWRY STREET, LONDON, E.C.3.

140 WEST GEORGE STREET, GLASGOW

Royal 3445.

Stocks kept in London, Hull, Liverpool, Glasgow

PURE ORANGE WINE

A. MILLAR & CO., LTD., DUBLIN

VINUM AURANTII B.P.)

Prepared in strict accordance with the Formula of the British Pharmacopœia.

(Wholesale only.)

Samples from Head Office, Thomas Street, DUBLIN, or London Office, 74 Great Tower Street, LONDON, E.C.3.

ALL CHEMISTS
SHOULD STOCK

ABDINE

THE GOLD MEDAL HEALTH DRINK.

Quick Seller, Big Profits. Over 40 years' Reputation.

"Abdine" is the most popular Health Drink, superior to all
Mineral Waters. The Original and only genuine Fruit Drink.

Reduced Price List can be had on application.

DUNCAN McGLASHAN, LTD., ABDINE WORKS, WESTFIELD RD., EDINBURGH

THE PRESCRIBER

Will keep you closely in touch with all
developments in the Newer Remedies.

Annual Subscription 20/- post free anywhere.
Half Year—July to December, 12/6 post free.

Through any Medical Bookseller, or direct from—

"THE PRESCRIBER" Offices, 6 South Charlotte St., EDINBURGH.

ATKINSON & BARKER'S INFANTS' PRESERVATIVE

THE BEST AND SAFEST INFANTS'
MEDICINE OF OVER 120 YEARS' STANDING.

Prices and Terms on application to R. BARKER & SON, Ltd.
13 Wesley St., C-on-M., MANCHESTER.

DOES
NOT
CONTAIN
any
SCHEDULED
POISON.

.....
The Nearest Food to Human Milk Yet Produced.



The Baby Food You CAN Sell.

The mother who knows "Berina" invariably expresses her satisfaction in it to other mothers; when her baby is admired, "Berina" is praised. Nurses testify to this wonderful food and doctors prescribe it. Each of these three instances represents a self-contained advertising campaign of most potent sales-promoting effect.

"Berina" is the best selling line that any progressive chemist can stock. The momentum of mother tribute and professional approval assures a rapidly growing demand.

The Advantages of "Berina"

"Berina" is an entirely new baby food, the latest outcome of research and the nearest food to human milk yet produced. The results obtained with "Berina" are incomparably good, this fact being testified to by eminent medical men.

It comprises all the natural essentials requisite and necessary to scientifically proportioned & accurately balanced baby food in the parts of Full Cream Milk, Cream of Wheat and Sugar of Milk.

Infants fed on "Berina" from birth are quite free from digestive troubles.



The Proprietors will be pleased to send free sample of "Berina" food to Chemists on receipt of postcard.

MONTGOMERIE & CO., LTD.,

IBROX, GLASGOW

(Proprietors of "Bermaline" Bread).

CODLIVEX

Better Than Cod Liver Oil.

All communications regarding
Codlivex should now be addressed
to the Sole Owners

TETMAL LTD.,
45 Farringdon St., London, E.C.4

Codlivex is being made for
Tetmal Ltd. by Messrs. John
Bell & Croyden.



UP, UP, UP, go the SALES of

NEW ZEALAND
'Imperial Bee' Honey

STOCK, and get your share of profits in this
EMPIRE PRODUCT. It is a thick,
creamy, irresistible HONEY, rich in vitamins
because it is uncooked.

GUARANTEED PURE and WITHOUT PRESERVATIVES.

CASES per doz. carriage paid.

48/1's Glass Screw-Top Jars at 14/0 | 48/1's Monopots at 12/6
48/1's " " " 8/6 | 48/1's " " 7/3

If you cannot obtain supplies through your Wholesaler, write to

A. J. Mills & Co., Ltd., 14 Tooley St., S.E.1

BCM/AP57

ESTABLISHED OVER 60 YEARS

PERRY'S
POWDERS

FOR CHILDREN'S AILMENTS



Wholesale from PERRY'S POWDERS, Ltd., LEEDS

NURSE HARVEY'S MIXTURE

A safe, simple and reliable remedy for Children's
Ailments is advertised so extensively in the daily
and weekly Press as to bring mothers to the
retailer without effort on his part.

The selling has been done before the mother
reaches the chemist, and, having supplied her, it
is only common sense to claim she will buy other
family necessities from him. Moreover, the con-
tinuous demand for it produces a quick turnover.

For Direct Terms apply to—

OSCAR SCRUTON & CO., YORK

Daily Mail

WINCARNIS

Keep your holiday health

Win Health - Win Strength - Wincarnis

Full Front Page "DAILY MAIL," appeared Aug. 13th.

WINCARNIS

BONUS PERIOD

From Sept. 1st
to Oct. 31st

Remember you will need a specially large supply to meet the big demand this heavy advertising campaign will create in your district.

Make your **BONUS ORDER** a Bumper one, and get your extra profit on every case.

The FIRST Advertisement in the Biggest Advertising Campaign ever launched for "WINCARNIS"!

COLEMAN & COMPANY, LTD.
Wincarnis Works, Norwich.



Saint-Raphael

**Tonic, Restorative,
Digestive Wine.**

Known throughout the World,
and prescribed in all cases of
**ANÆMIA, DEBILITY, and CON-
VALESCENCE, to Young Women,
Children and the Aged.**

DOSE : One wine-glass after the
two principal meals.

Recommended by—
PROF. BOUCHARDAT, Professor of
Hygiene, Paris Faculty of Medicine.
DR. MACNAUGHTON JONES, London,
England.

"For more than thirty years St. Raphaël Wine has been exclusively prescribed, with success, in the Paris hospitals as a pure tonic, by eminent physicians, such as Magendie, Rostan, Chomel, Velpeau, Requin, Monneret, Trousseau, Grisolle, Laënnec, &c."—*Union Médicale*, May 8 and June 12, 1873.

"The 'Vin de St. Raphaël' is often used for ladies nursing their own children; it is preferable to stout, which creates an unhealthy fat."—*The Lancet*, London, England.

"St. Raphaël Wine is most precious in all cases where it is necessary to give tone to the system, without effort or shock."—**DR. C. DES BARRES**.

Cie du VIN SAINT RAPHAEL, Valence, Drome, FRANCE

**To be obtained from all
Wholesale Druggists.**

NEWBALL & MASON, Ltd. NOTTINGHAM

will be pleased to receive applications for
PRICE LISTS as below:

- (1) **MASON'S EXTRACT OF HERBS.**
Ginger, Lemonine, etc.
- (2) **MASON'S WINE ESSENCES**
(Summer Flavours)
Lemon, Lime Fruit, Orange,
Lemon Squash, etc.
- (3) **PACKED GOODS FOR SUMMER TRADE.**
Clark's Liver Salt,
Malt and Hop Packets,
Citrate Magnesia,
Lemon Crystals, Salines,
etc., etc.

**WINDOW
DISPLAY
ALLOWANCES**

with opening orders
for Extract of Herbs
and Wine Essences.



Schimmel & Co.

MILTITZ, near LEIPZIG.

Manufacturers of

ESSENTIAL OILS, ESSENCES & AROMATIC CHEMICALS

Speciality :
FIXORESIN

*A fixing Agent for
Soap Perfumes and Extrails.*

In Various Aromas.

SAMPLES ON APPLICATION.

PEPPERMINT OIL, B.P.
SAVIN OIL
PINE OIL
SAFROL
BENZALDEHYDE, F.F.C.
FLORAL OILS
ESSENCES FOR LIQUEURS
FRUIT ESSENCES, etc.

SOLE AGENTS FOR THE U.K.

FREDK. BOEHM LTD., 17 Jewry St., LONDON, E.C.3

**MAGNUS,
MABEE & REYNARD**
INC.

AMERICAN ESSENTIAL OILS

BAY
CEDARLEAF
CEDARWOOD
PEPPERMINT
PETITGRAIN
SPRUCE
TANSY
ERIGERON
SPEARMINT
WORMSEED

BALSAMS

ADDRESS:
MAIN SALES OFFICES
32 CLIFF STREET, NEW YORK, U.S.A.

ESTABLISHED 1768.

ANTOINE CHIRIS
GRASSE

ESSENTIAL OILS
FLORAL WATERS
GUM BENZOIN
OLIVE OIL

ANTOINE CHIRIS LTD.

3 DRAPERS GARDENS,
THROGMORTON AVENUE, E.C.2.

Telephone - - - - London Wall 7419

A Name that Merit has made Famous

"HARLENE- HAIR-DRILL"

THE extensive and intensive advertising campaign constantly running in connection with "Harlene" still continues and will still continue to draw immense response from all over the country. Thousands of Free Trial Gift Parcels are dispatched to new applicants every day, thus increasing the already colossal retail business.

Do you stock the following "Quick Sellers"?

- | | |
|--------------------------|--------------------------|
| "Harlene" for the Hair | "Astine" Vanishing Cream |
| "Uzon" Brilliantine | "Astine" Tooth Cream |
| "Cremex" Shampoo Powders | "Astine" Shaving Stick |
| "Astol" for Grey Hair | "Astine" Nail Cream |

TWO ENTIRELY NEW LINES! "JUNOFLORIS" Spring Breath TABLETS

A Breath Purifier and Antiseptic Mouth and Stomach Deodorant in Tablet Form—NOT a Cachou. As "Junofloris" is an entirely New and Original line which does not compete with anything in existence it will therefore add EXTRA PROFIT to your Business.

Packed in Neat Counter Display Cartons of 1 doz. Boxes which Sell "Junofloris" at sight.

"JUNOFLORIS" Spring Breath DENTIFRICE

A Dental Cream embodying the principal characteristics of ordinary tooth powders and pastes PLUS the unique power to remedy the tendency to Unpleasant Breath.

Prices of both { Advertis'd (minimum Retail) 7½d. & 1/1½ per box
above lines { Makers' .. 6/8 & 12/- „ doz.
Less 20% Discount.

**PLACE YOUR
ORDER TO-DAY**

For Full Particulars, Terms, etc., write to:—

EDWARDS' HARLENE LTD.

20, 22, 24, 26 LAMB'S CONDUIT
STREET - - LONDON, W.C.1.



MERCOLIZED WAX

— : for the Complexion : —

and

STALLAX

— : a Shampoo : —

TWO substantial and well-advertised lines which show a handsome profit to the Retailer, and, moreover, may be stocked fearlessly owing to the Manufacturers' most liberal Sale or Return Guarantee.

Both are obtainable in two sizes, and their reputation and sterling value assure a steady turnover.

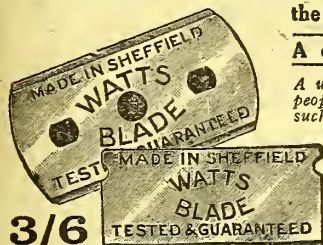
Advertising Matter, advice, and sales help are always available from

DEARBORN (1923) LIMITED

37, GRAY'S INN ROAD

LONDON, W.C.1.

Assist British industry by recommending the 'WATTS' Sheffield-made Safety Razor Blade, the blade of super-keenness.



3/6
per doz.
allowing
50% PROFIT
on cost for
the dealer.

Sole Manufacturers: JOHN WATTS.
Dept. 3, LAMBERT WORKS, SHEFFIELD.
London: 24, REDCROSS ST., E.C.1.
Established over 150 years.

A counter display will help.

A user writes: "Can't understand people buying foreign blades when such as yours are obtainable."

12 Perfect Blades in Every Dozen

For Gillette-Type and Autostrop-type holders

"LAUREL" SAFETY RAZOR BLADES.

ALSO
AUTO-
STROP
TYPE



TRADE
WITHIN
THE
EMPIRE

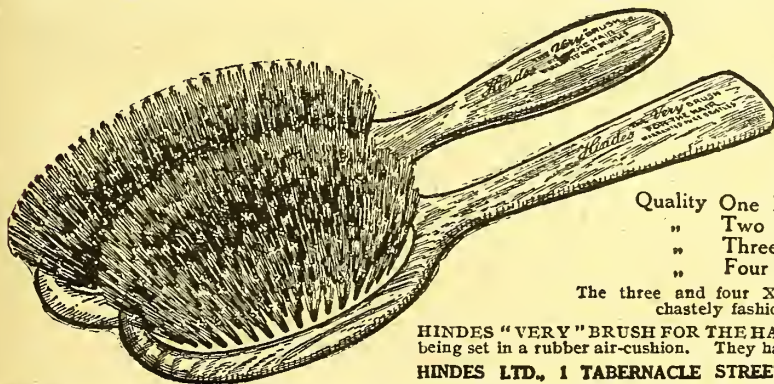
Retails at a less price than any on the Market.
Satisfaction Guaranteed. Send for free samples.

Manufactured by

GEO. H. LAWRENCE, 32 EYRE STREET, SHEFFIELD.

Phone: 1071 Cent.

Telegrams: "Laurel Sheffield."



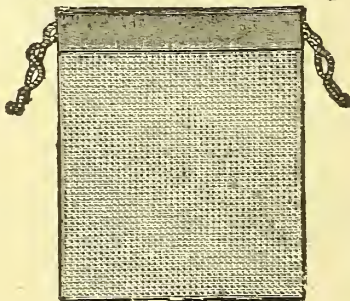
HINDES "VERY" HAIR BRUSH

Quality One X	Sold at 7/6d. each.	TRADE PRICE 33 1/3%
" Two XX	" 10/6d. "	
" Three XXX	" 15/- "	
" Four XXXX	" 18/6d. "	

The three and four XXXX grade is made in Ebony or Rosewood chastely fashioned in both oval and circular bodies.

HINDES "VERY" BRUSH FOR THE HAIR is guaranteed pure bristles, the multiple tufts being set in a rubber air-cushion. They have been known to the trade for nearly 40 years.
HINDES LTD., 1 TABERNACLE STREET, LONDON, E.C. :: Works: BIRMINGHAM

SPONGE BAGS, RUBBER AIR CUSHIONS

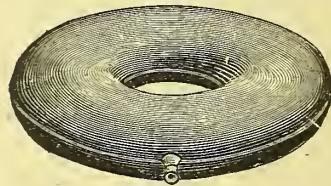


No. 978



No. 1778

(BRITISH MAKE)



No. 1194

No. 978.—	Sponge Bag,	star check sheeting	per doz.	4	6	6	0	7	6	9	0	11	6	13	6
"	"	best check, fancy binding	"	6	0	7	6	9	0	10	6	12	0	14	0
"	"	twill check, super quality	"	9	0	10	0	12	0	14	0	16	0	18	0
1200.—	"	assorted, fancy colours	"	8	0	10	6	12	6	15	0	18	0	21	0
1201.—	"	The "Climax," proofed both sides	"	7	0	8	6	9	6	11	6	13	6	16	0
1778.—	"	RED RUBBER, British	"	—		16	0	18	0	20	0	22	0	24	0
1205.—	Toilet Case,	check sheeting	.. ..	Size } 3/6 each						Size } 4/3 each					
		fancy sateen	.. ..	20×10 ins. } 4/- "						26×10 ins. } 5/- "					
1194.—	The "Empire"	circular red india-rubber Air Cushion—													
			DIA.	14	15	16	17	18	19	20 ins.					
			each	5	6	6	0	7	0	7	6	8	6	9	6
1353.—	Square shape	.. ..	"	8	9	9	4	9	10	11	0	12	0	13	9

CARRIAGE PAID ON ORDERS OF £3 AND UPWARDS.

A discount of 5% for prompt cash is allowed on all amounts of 10/- and upwards. Money returned if goods are not satisfactory. Write for Price Lists of Druggists' Sundries, Toilet Requisites, Rubber Goods, Cut Sheet Rubber Appliances, etc.

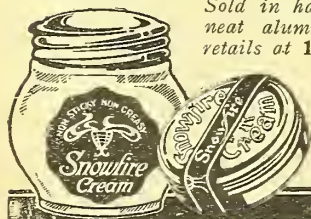
BURGE, WARREN & RIDGLEY, LTD. 91 & 92 GREAT SAFFRON HILL, LONDON, E.C.1

A REAL "Best Seller!"

If you keep a list of best selling lines, as many Chemists do, you're certain to have a place in it for Snowfire Cream. This exquisitely fragrant skin beautifier grows more popular everywhere, everyday—bringing more profits to chemists handling it. Sound advertising not only maintains demand but keeps it on the increase. Among popular priced face creams—this is a real "Best Seller."

Snowfire CREAM

Sold in handsome opal jars and neat aluminium containers and retails at 1/3 and 3d. respectively.



F. W. HAMPSHIRE & Co.
Ltd.
Riverside Works, Derby

FLOROGEN Regd.



GREEN TUBES
Nickel Caps.

FROZEN COLOGNE
(Does not evaporate)

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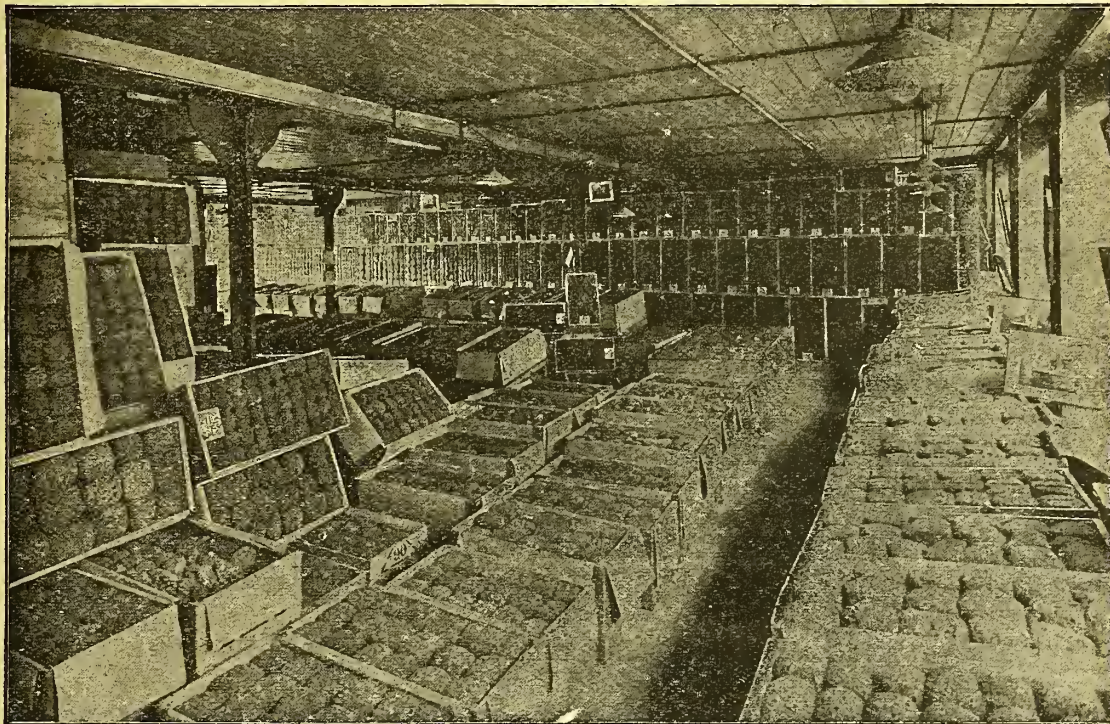
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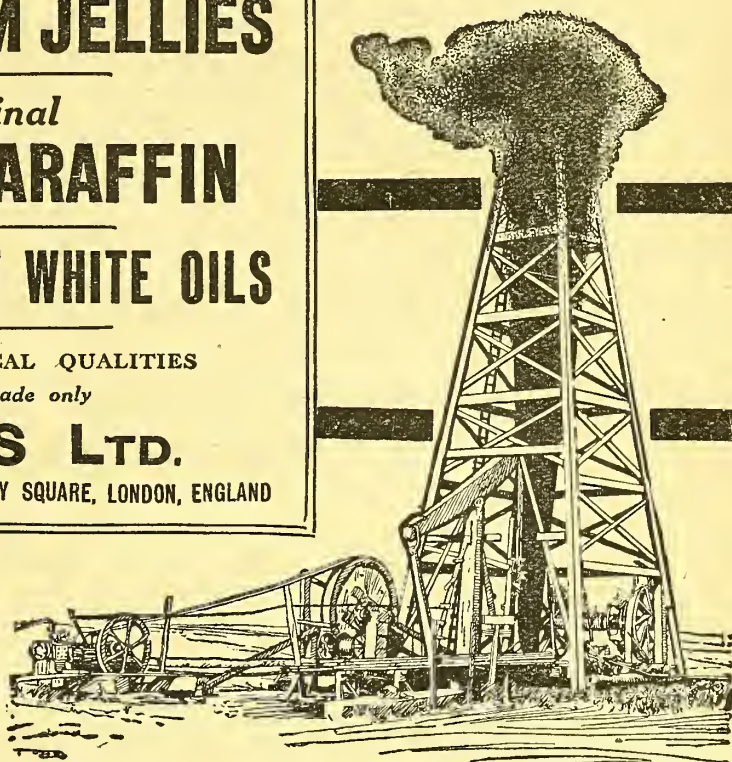
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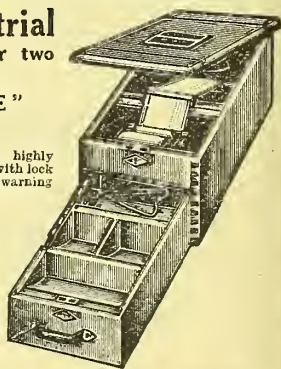
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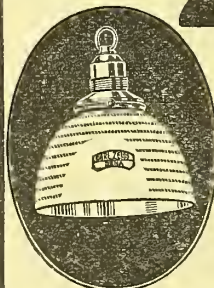
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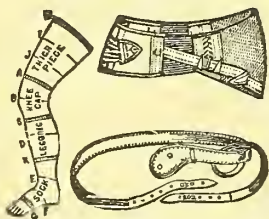
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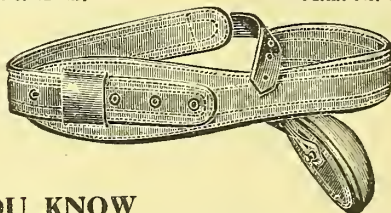
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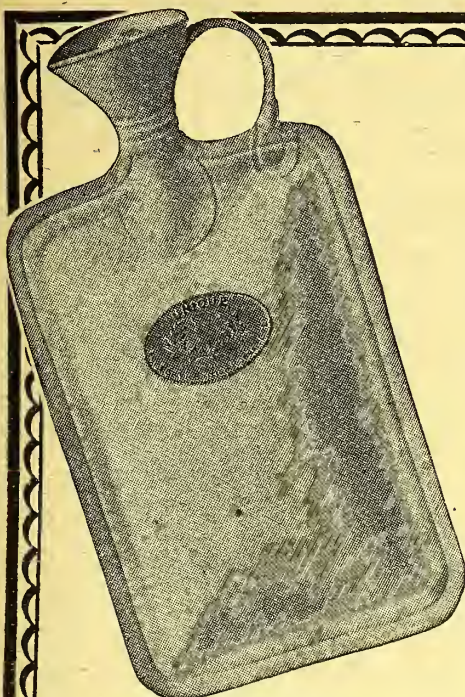
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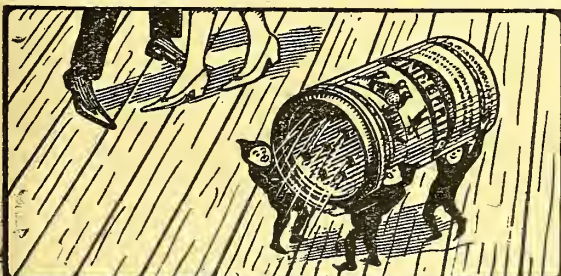
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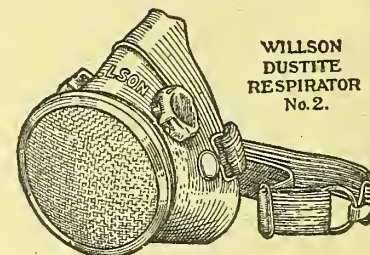
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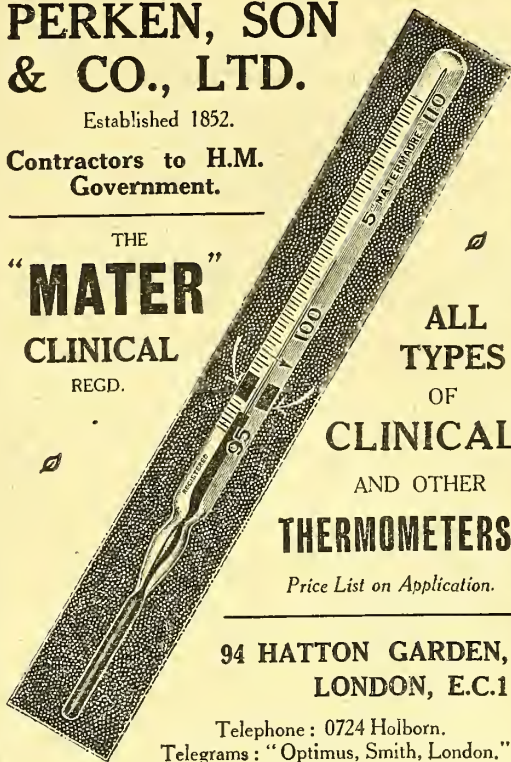
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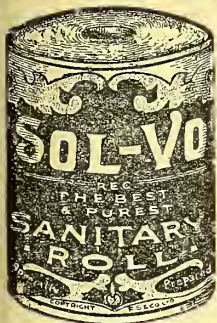
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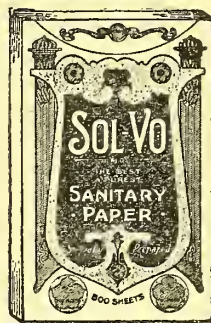


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CORVUSINE D.G.

Formalin is now contained in that well-known liquid seed dressing, **CORVUSINE D.G.** in correct strength as recommended by the Ministry of Agriculture as a protection against **BUNT**. No extra charge is made. Corvusine users therefore save their Formalin expenditure.

Write for terms of this valuable agency to the Sole Manufacturers:

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Sherleys**LACTOL &c.**

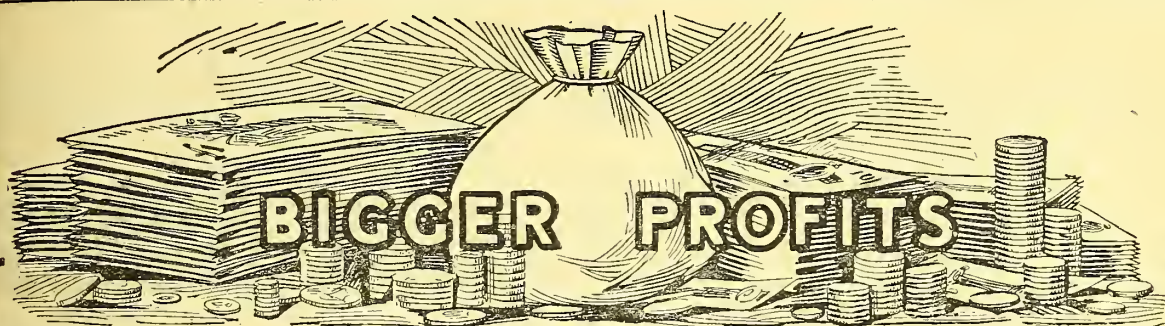
(P.A.T.A.)

of profit for the retailer, and the terms on which they are supplied preclude any possibility of loss. We have an excellent range of literature and show cards, and do all in our power to assist chemists by referring mail customers to them. **WRITE FOR NEW PRICE LIST AND TERMS.**

A. F. SHERLEY & CO., LTD., 18 MARSHALSEA ROAD, LONDON, S.E.1.

Tel. No.: Hop 1897.

Telegrams: "Sherleydom, London."

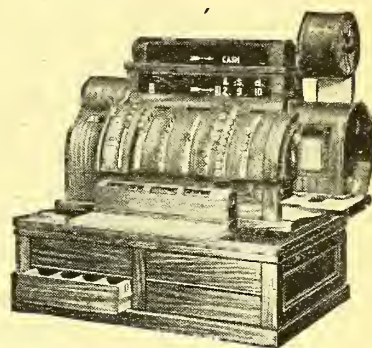


How More Money can be made in a Retail Shop

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NATIONAL CASH REGISTER

Below are some of the ways in which
a "National" increases net profit and
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WHAT THIS "NATIONAL" DOES.

Separately adds each assistant's takings.
Shows total of all money received.
Shows total cash sales, credit sales, money received on
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Prints permanent detailed shop record of every
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Gives proprietor easy and complete control.
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There are more than 500 different models of "Nationals"
any one of which can be secured on easy terms
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**Prices £25, £30,
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1. Saves mistakes and loss.
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8. Prevents disputes which would lose custom.

*We can prove ALL these claims if you will give
us the opportunity to do so.*

At least it will cost you nothing to get further
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Address

C. & D. (A.)



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Lipsalve Cases, Sprinklers, etc.

Made in Pure Tin, Lead,
or Lead coated with Tin,
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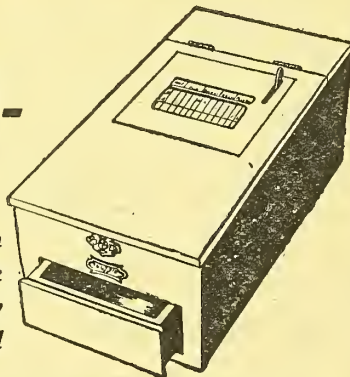
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Made in
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Record roll ruled for four
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Efficient Display
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We get the best out of every film.

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are now sold in glass tubes, encased in smart, clean-looking "safety-first" cartons. They are retailed at 2d. each, made in 25 popular shades and colours, and are extensively advertised in the right publications.

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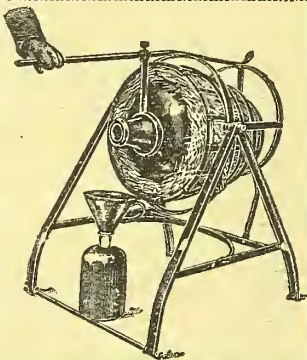
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For drawing off small quantities of acids, etc. from Carboys, with ease and safety.

The Carboy can be tipped to any position with one hand.

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WE HAVE SPECIALISED IN THE
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BATTLE'S SUPERFINE GRADE

Absolutely Water-white in all dilutions.
Does not burn the skin or cause irritation.
Finest packing in attractive Cartons.

Sell the best and give your
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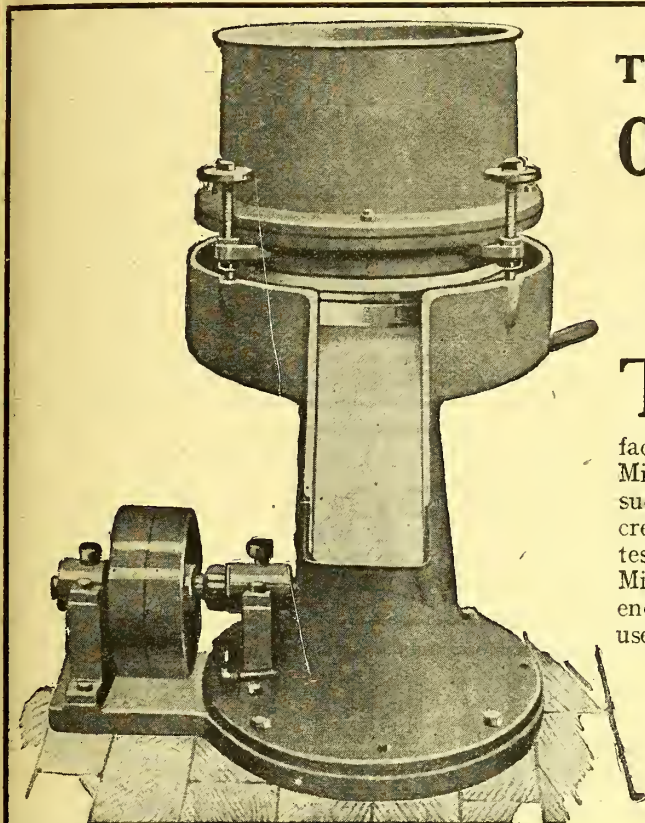
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For the Home, Farm, and all General Purposes.

Approved for use under the Diseases of Animals (Disinfection) Order of 1926.

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THIS ILLUSTRATION SHOWS THE NEW
SUPER SPEEDY MILL

THERE are now approximately 300 of S. W. WILKINSON's original Speedy Mills in use by British and other Manufacturing Chemists. A number of the new Mills are now in use and are giving much success and pleasure to the users and much credit to the designer and maker. Splendid testimonials have been received. The new Mill is the result of nearly 20 years' experience with the original Mill and the various uses to which it has been applied.

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This gives a thorough mix-up

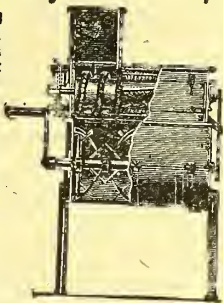
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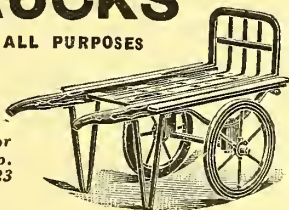
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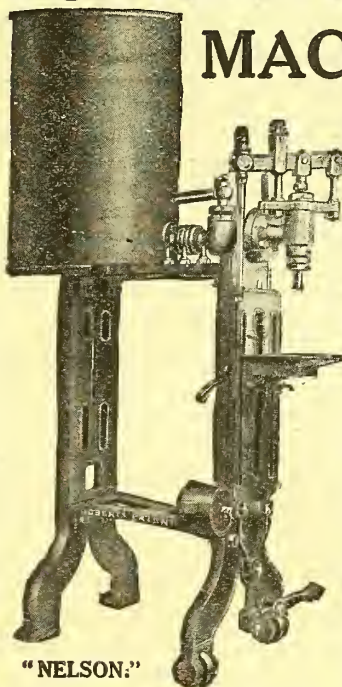


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Manufacturers of Trucks and Handcarts
of every description,

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**CLEANLINESS
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GUMS, ARABIC and TRAGACANTH as Imported or
Finely Powdered. :: SHELLACS ALL GRADES.Those First Grey Hairs
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TATCHO-TONE ^{Trial Phila³}
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FOR COLOURING GREY HAIR

This popular article is largely advertised
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Trial size 8d. per doz. .. 6/-
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PELLETTA FOR THE COMPLEXION 1/4 3/3
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ALL WHOLESALE HOUSES. P.A.T.A.

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SESSION 1926-27. - CHEMISTRY DEPARTMENT.Classes will be held in Chemistry, Pharmacy, Materia Medica
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FARMER'S "BAITED" PHOSPHOR PASTE

It is a wonderful destroyer and A.I. Rat and Mouse Poison.

Please Keep Supplies and Recommend.

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PILL BOXESThe most convenient and
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Samples and Prices on application.

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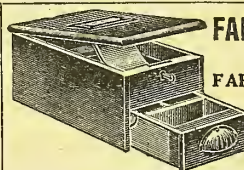
**TALCUM POWDER
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Any Colour.
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Any Quantity.All Merchandise in Bulk or in your own Containers.
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samples sent on receipt of a
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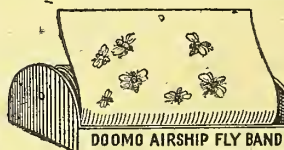
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A wide and long band, sticky on
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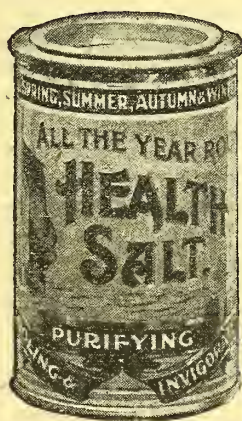
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Contains no
Sugar, Glauber
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Saline

8 oz. bottles (Retail) .. 1/9
13/- dozen.
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Cut-out showcards in colours
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ALL THE
YEAR ROUND

Health Salt

A line which
has sold well
for many years.

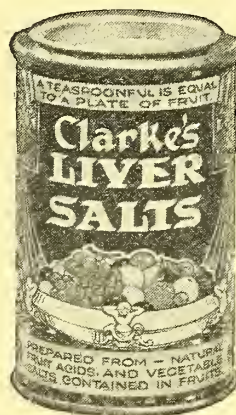
4 oz. Enamelled lever lid tins, 4/9 doz.
Gross lots 4/6 doz.

CLARKE'S

Liver Salts

Free from Sugar
Glauber and
Epsom Salts.

Showcards with
all Orders.



4 oz. tins (Retail 7½d.), 5/- doz. 3 doz.,
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This is a new line, beautifully got up and
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The appearance of your goods is an extremely important matter, and in the matter of labels or boxes we offer really artistic designs at a very low price.

Write for specimens and prices and see for yourself.

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Advertising matter of every description

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This is the *Original* firm, established in 1842, who have for many years past supplied SEED DRESSINGS, Sulphate of Copper, etc. Agents' own formulas receive special attention, the recipe being faithfully followed. Quotations and samples promptly sent.

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CUSTOMERS PLEASE
ADDRESS AS ABOVE? WE
HAVE NO CONNECTION
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BRISTLES WITH STRONG POINTS.

Sheffield Throughout ← Popular Price →

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THE "MITCHELL" BLADE
1/6 (Made in Gillette and Autostrop Patterns) 3/-
for **50% Profit for You.** for
6 WE SUPPLY 12
TESTIMONIALS THAT TELL, SHOWCARDS THAT SELL.
R. S. MITCHELL, Unity Works, Langsett Rd., SHEFFIELD.

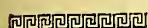
VISKAP The ORIGINAL-BEST and ONLY BRITISH MADE.

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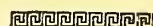
SELF-FIXING, HERMETIC, TRANSPARENT, OPAQUE, COLOURED.

IMMEDIATE DELIVERY
FROM THE MANUFACTURERS.

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'TABLOID' BRAND

'EMPIRIN' COMPOUND

By 'Empirin,' gr. 3-1/2 (0.227 gm.)
(Acetylsalicylic Acid)
Phenacetini, gr. 2-1/2 (0.162 gm.)
Caffeinæ, gr. 1/2 (0.032 gm.)



Reduced facsimile

Bottles of 25 and 100,
at 15/- and 45/- per
doz. (subject)

'EMPIRIN' preparations are pure, accurate and dependable products reflecting credit on dispenser, prescriber and manufacturer alike. They are prescribed by doctors throughout the world and therefore constitute an essential detail of every well-stocked pharmacy.

The great utility of 'TABLOID' 'EMPIRIN' COMPOUND is indicated by its formula. Its supreme therapeutic efficiency is due to the quality of its ingredients. It pays to introduce this product. Customers soon appreciate that its action can be relied on.

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'Tabloid' 'Empirin' and Caffeine
" 'Empirin' and Phenacetin
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(For strengths and prices, see General Trade Price List)



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"SAJODIN"
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"SALOPHEN"
"NOVASUROL"
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Make sure that all products sold under the above
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*Proceedings will be taken against any
person selling or offering for sale
under any of the said trade marks
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Benger's Food is standardised for all illnesses
involving or arising from weakness of the digestive
system in Infants, Invalids and the Aged. Its
composition and its uses have been well known to
medical men and pharmacists for over 40 years.

Show Material from—
BENGER'S FOOD, LTD., ——— MANCHESTER.

SELLING MORE THAN EVER ZEPTO ANTISEPTIC TOOTH PENCILS



The display of this attractive Window
Show, supplemented by the advertising
appearing in the leading Magazines, etc.,
Compels Sales.

Order Now and Secure Your
Share of the Generous Profits

Costs You **5/3** per Doz.

Sells at **9d.** each.

41-66% on Selling Price.

or 71-42% on Outlay.

ORDERS FOR 6 DOZEN
includes 1 Dozen Bonus (given in con-
sideration of a Window Show) securing
you 50% on Selling Price.

THOS. CHRISTY & CO.
4/12 Old Swan Lane, London, E.C.

Build your Business*on SOUND LINES*

Over and Over Again

RARELY is the sale of a bottle of Hydrogen Peroxide Solution, P., D. & Co., unrepeatd. "Peroxide" generally gives the user a definite indication of its quality—or lack of it—before the bottle is finished. Once tried, the P., D. & Co. brand is asked for over and over again.

Satisfied, regular customers are a pharmacist's chief asset. Hydrogen Peroxide Solution, P., D. & Co., because of its stability and purity, will help you to get them.

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16-oz. .. 4s. 6d. " "

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4-oz. .. 12s. 2d. *per doz. net*
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Hydrogen Peroxide Solution
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ESTD. 1823

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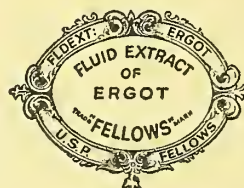
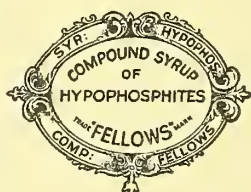
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Pure crystallised strophanthine.
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An arsenical extensively used in the treatment of Syphilis.

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A chemical compound of phosphorus and turpentine. A nervine tonic.
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Odourless and tasteless valerian.
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Headaches are the commonest and most frequently recurring of all human ills.

Consistent national advertising has made "Daisy" known to and respected by millions of users.

"Daisy" guarantees a steady year-round turnover.

"Daisy" is doubly profitable to the keen chemist.

Not only does it keep the till merrily ringing, but it brings customers regularly to your counter offering frequent opportunities for making other sales.

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TERMS:

1/- boxes (8 powders),
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Single powders, 2d.
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9/- dozen
8/6 in 3 dozen lots

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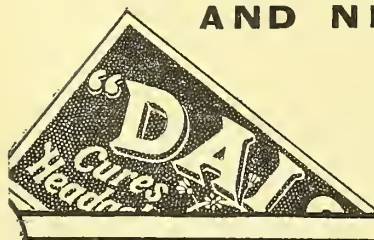
60/- under - 1 dozen boxes
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Special bonus on direct purchases
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KARMOID TABLETS

FOR
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FOR
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Advertisements are scheduled to appear in
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5% Quantity Discount on all 6 dozen Orders.
Supplied through Wholesaler or direct.

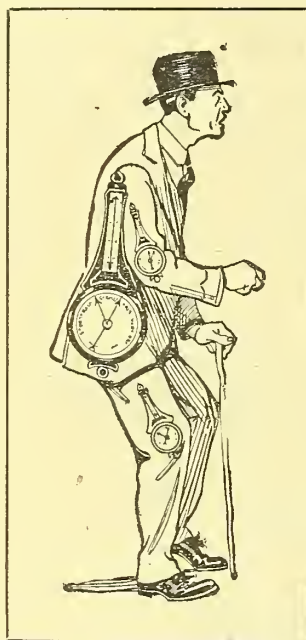
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It does not matter where the Barometer is

CURICONES

will deal with the trouble, be it

**Rheumatoid Arthritis, Neuritis,
Rheumatism, Gout, Lumbago
or Sciatica.**

Quick Sales.

WELL ADVERTISED.

Generous Terms.

RECOMMENDED BY DOCTORS.

Stocked by all Wholesale Houses

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Manufacturing Chemists,

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Month by month the sales are increasing for 'YADIL,' the great internal and external Antiseptic.

Place a few bottles on your counter and in your window and test it for yourself.

See that you have a supply with the new labels—BLUE for Medical and GREEN for Veterinary.

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YADIL PRODUCTS (1925) LTD.

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IGLODINE is being advertised. The unfailing effectiveness of its action is going to make trial purchasers into IGLODINE enthusiasts.

Every Chemist should be prepared to supply IGLODINE—a dependable antiseptic, quick-selling and profitable.

Write for fullest particulars and terms—

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DR. BOW'S LINIMENT.

Prepared by his Great-Great-Grandson



(J. D. R. BOW, Managing Director.)

RETAIL 3/-

The Gothic window and the name "DR. BOW'S LINIMENT" are Registered Trade Marks and appear on every bottle. Anyone using the name or any similar name is liable to be proceeded against.

The above label in Blue appears on outside wrapping.

DR. BOW'S LINIMENT, Ltd.

Works—7 South Gray St., Edinburgh.
Registered Office—3, 4 & 5 Queen St., Cheapside, London, E.C.4



Highest obtainable quality;
Wide choice of labels;
(OWN NAME perfectly printed in)
Remarkably low prices;
are some of the reasons why
you should let us quote you for

MALT and OIL



WILL you be good enough—in your own interest and ours—to ask us to send you quotations before you buy? We offer a wonderful range of labels (specimens sent with quotation), and the best-grade, best-looking Malt Extract at a price that will enable you to compete with anyone.

*Send us a
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Get Ready for a big Winter Trade

EXTRACT OF MALT & COD LIVER OIL

We are in a position to quote specially low prices for winter's contract—packed or in bulk.

CREAM EMULSION of Cod Liver Oil with Hypophosphites

A perfect Emulsion. Palatable and Creamy.

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WHITE PINE COUGH SYRUP

Both most effective cough cures—and very attractively packed.

B.P. LINIMENT

For Lumbago, Rheumatism, Sciatica, etc. Will ensure many grateful customers.

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Extract of Malt and Olive Oil—sells all the year round. Once introduced, makes recommending a pleasure.

Let us quote you for any and every winter requirement. Sample cheerfully mailed. Send for Illustrated Catalogue.

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The New Treatment for Rheumatoid Arthritis, Rheumatism, Neuritis, Sciatica, Lumbago, Gout, Colitis and all Inflammatory Conditions.

We continue to receive astounding testimony of the efficacy of Beltona Treatment, the following are particulars of a case recently brought to our notice:—

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BELTONA LTD. - HODDESDON, HERTS.

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"MENTHELLS"

(TRADE MARK)

and for all seasons of

"DIGESTELLS"

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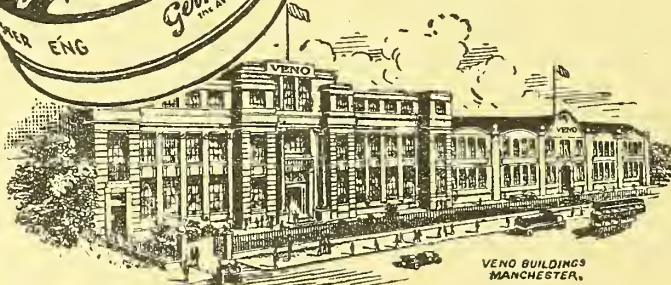
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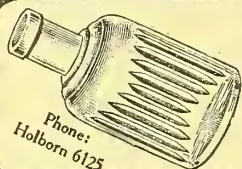
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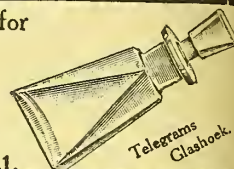
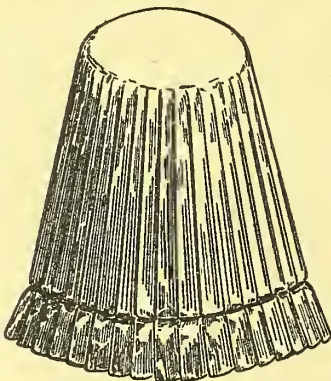
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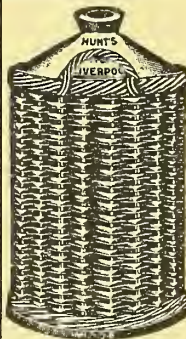
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PANEL FLATS**

Pale Green, 6 oz.

**MEDICAL FLATS**Pale Green, 6 oz.,
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etc., etc., etc.PLEASE ASK FOR CLEARANCE LIST.
We shall be pleased also to send you our Current Price List.
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(Strictly Wholesale. Case lots only.)**PLAIN and WICKERED
STONE****BOTTLES & JARS**FOR SPIRITS, ESSENCES,
CHEMICALS, ETC.**HUNT'S Limited**

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When a Mother cannot suckle her child ———

it is of the utmost importance she should use only the best means of artificial feeding.

Every pharmacist will recognise this, and will wish to supply the mother who comes to him for a feeder with the best that is made. To be sure of doing this he should specify Wood Brothers' make when ordering from his wholesale house.

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Highly qualified chemists keep a constant watch on the purity of the materials used. The beautiful lustrous white flint glass of which the feeders are made contains neither arsenic nor lead (usually present in ordinary white flint), and is so durable that it can be continuously boiled in water for twenty-four hours without showing signs of deterioration. The workmanship is of the best. Every feeder is carefully examined before it leaves the factory, and all showing any defect are destroyed.

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as an Invalid. Cater to his
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*There is no better help than
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This shows a net profit on the transaction to the Chemist of 35%, besides attracting the passer-by to the window and considerably augmenting sales generally.

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The above conditions apply only to the United Kingdom.

EXAMPLE.

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3½ dozen 1/3 size at 12/- net		£2 2 0		£2 12 6
2 " 3/- " at 30/- "		3 0 0		3 12 0
		5 2 0		
Less 10/6 for Window Show		10 6		
		£4 11 6		£6 4 6

Showing a Net Profit of £1 13 0 on an outlay of £4 11 6.

Window Display Material Free and Carriage Paid.

WHOLESALE PRICES OF PHOSFERINE.Carriage Paid.Monthly Account.

1/3 size		12/- per doz. net.
3/- "		30/- " "
5/- "		48/6 " "
12/- "		114/- " "

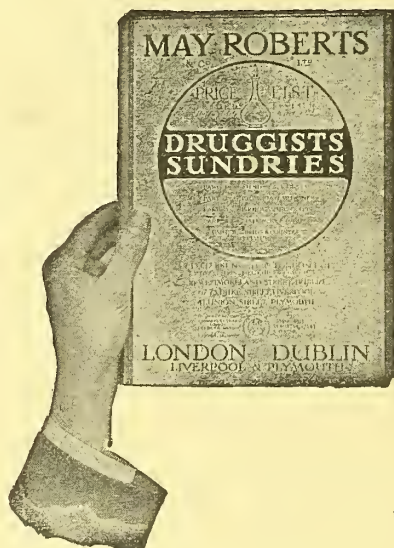
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Phosferine and all of our Proprietary Medicines are supplied on the condition that they are not retailed in the United Kingdom under the following prices—viz., 1/3, 3/-, 5/-, and 12/-.

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*The most complete and up-to-date
Chemists' Sundries Catalogue
and it only costs a postcard.*

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A Chemist writes:—

*"It is a great list and worthy
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A WEEKLY JOURNAL OF PHARMACY AND OF THE CHEMICAL AND DRUG TRADES

THE CHEMIST AND DRUGGIST is in circulation and reputation the leading journal addressing the Chemical and Drug trades in the British Empire and other countries in the Old and New Worlds. It is the official organ of the Pharmaceutical Society of Ireland, the Chemists' and Druggists' Society of Ireland, and of other Chemists' Societies in the Overseas Dominions.

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TWENTY SHILLINGS a year payable in advance to any part of the world, including a copy of *The Chemist and Druggist Diary*. Subscriptions may begin with the first issue of any month. Single Copy, 9d., post free; *Diary*, 10s., post free. Postal orders and cheques should be crossed "Bank of Liverpool and Martins, Ltd."

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"C. & D. Diary," 1927

"Known, Admitted and Approved" Remedies

The publication of *The Chemist and Druggist Diary*, 1927, which will take place in December, affords a unique opportunity of registering formulas for "known, admitted and approved" remedies, which can then be sold by chemists free of medicine-stamp duty, provided the appropriate reference to this standard work is given on the label of the preparation. It is an exceptional opportunity for chemists who require to make revisions rendered necessary by changes in poison law or developments in pharmacy. It is necessary that formulas, either new or modified, with the title under which the article is to be sold, should be submitted **not later than October 18** for inclusion in the *Diary*. In view of the large number of formulas received and of the fact that each year many chemists overlook the date fixed, we desire to point out that part of the *Diary* goes to press a few days after. Consequently we cannot publish any formulas received after the date mentioned. Formulas, which must be written on one side of the paper only, should be addressed to the Editor, *C. & D.*, 42 Cannon Street, London, E.C.4.

English and Welsh News

The Editor will be obliged if subscribers will send him marked copies of newspapers containing items of interest for insertion in this or other news sections.

Livery Companies' Exhibition

An exhibition of works of art belonging to the Livery Companies of the City of London is being held at the Victoria and Albert Museum, S.W. Among the fifty-eight companies which have loaned some of their treasures are the Apothecaries and the Spectacle Makers, those of the former including a beadle's staff; a heart-shaped pill slab of Lambeth Delft ware decorated with the arms of the company; the grant of arms, dated 1634; a patent of appointment of two former masters as apothecaries to Charles II; an early seventeenth-century tablet from the chemist's shop in the company's hall; and various mahogany chairs of the eighteenth century. Notable among the few exhibits of the Spectacle Makers' Company is a two-handled cup and cover given by Mr. C. E. Sebag Montefiore in 1923. The hall-mark on the cup is that of 1807. According to the catalogue, the company's charter is also on view, but it appears to have been withdrawn at the moment. The exhibition will remain open during September.

Creditors' Meetings

A meeting of the principal creditors of Mr. George Frederick Shepherd, chemist and druggist, Bellhouse Road, Shiregreen, Sheffield, was held recently, when a statement of affairs was presented which showed ranking liabilities £1,843 3s. 10d., of which £528 19s. 7d. was due to trade creditors. The assets consisted of: Stock, £200; fixtures, fittings and utensils valued at £111 15s.; and other items, making a total of £506 2s. (net, £406 2s.). Mr. F. J. Slater, accountant, reported that the debtor commenced trading at Rotherham in 1921, with a free capital of £300. He purchased property for £1,000, obtaining a mortgage of £750. He also spent various sums on repairs and alterations, and suffered a loss through destruction by lightning. He sold the business in April last for £450, and obtained £750 for the property. He removed to his present premises, and the takings had dropped from £23 to about £15 a week. The cash creditors were relatives, and they were prepared to stand aside until the trade creditors had received 7s. 6d. in the £, and then rank *pari passu* with the other creditors for any further dividend. It was decided that that offer should be accepted.

The creditors of Mr. James McInroy, chemist and druggist, Brunswick Road, Liverpool, were called together recently at Liverpool, when the representative of John Thompson (Wholesale Druggists, 1921), Ltd., was elected to the chair. The statement of affairs presented showed ranking liabilities £3,082 10s. 11d., of which £1,714 0s. 11d., was due to trade creditors. The assets were estimated to realise £319 18s. 10d. (net £298 12s. 5d.). It was reported that there were friendly creditors, whose claims totalled £1,500, who would withdraw if the estate were not administered in bankruptcy. The debtor commenced trading at the above address in March 1915 with a capital of £100, part of which was borrowed from friends. At the outset the business was a success, the turnover by 1921 having been worked up to approximately £3,000 per annum. Since that time the sales had declined, and were now about £2,000 per annum. A full set of books had not been kept. In 1920 the debtor purchased another business for £250, but in October 1924 he disposed of it for £300. The present position was attributed to the slump in trade, and interest paid on borrowed money. The creditors passed a resolution to the effect that unless a cash offer of 5s. in the £ was forthcoming within seven days the debtor should be requested to file his petition. The following are among the creditors: John Thompson, Ltd., £733; Evans Sons Lescher & Webb, Ltd., £224; R. Sumner & Co., Ltd., £130; Ayrton, Saunders & Co., Ltd., £63; Thos. Swales, £20; Baiss Bros. & Co., Ltd., £11; J. Grossmith & Son, Ltd., £16; National Cash Register Co., Ltd., £15; Scott & Turner, Ltd., £18; Virol, Ltd., £12.

Dangerous Drugs Acts Cases

At Newport, Mon., on August 16, Herbert Gobie, of the s.s. "Statesman," was ordered to pay £3 3s. costs on a charge of delivering a mixture containing morphine to a person not authorised to be in possession of the drug; Walter J. Pyke, Newport, charged with being in possession of the drug, was fined £10; and a charge of delivering against Albert H. Brown, of the s.s. "Statesman," was dismissed.

At Marlborough Street Police Court, London, on August 20, Benjamin White (43), Cambridge Terrace, W., was charged on remand with being in unauthorised possession of "dangerous" drugs (*C. & D.*, August 14, p. 292). The fiat of the Attorney-General had been obtained to proceed with further charges, making a total of seven. The "exhibits" produced in court included a small brown bottle containing 415 gr. of cocaine hydrochloride, and others containing respectively 309 gr., 293 gr., 255 gr., 224 gr., 346 gr., and 738 gr. Certain tubes contained in all 140 gr. of a substance which appeared to be morphine hydrochloride, and a box was stated to contain five pills weighing 7 gr. of a substance containing not less than 21 per cent. of the same drug. The accused, who reserved his defence, was committed for trial.

Birmingham

Reference to the death of Mr. C. S. Baynton will be found on p. 397 of this issue.

A meeting of the creditors of Messrs. Thomas Napper & James Davenport, St. George's Place, was held on August 24, when a statement of affairs showed a surplus of £992. It was stated that the business was established in 1914 with a capital of £1,100. A committee of creditors was appointed to report within fourteen days whether the business can be carried on.

Liverpool

The tennis section of the Pharmacy Club spent rather a quiet day at Wavertree on August 22, owing to a number of members being away from home on holiday.

A good story is told against himself by a well-known local chemist who advertises his corn cure rather widely. While in the company of several friends a safety razor blade accidentally dropped out of his pocket. Questioned in humorous vein by one of the party as to what he used it for, he unthinkingly replied, "I use it to cut my corns."

Sheffield

Mr. and Mrs. Leslie Piper spent their honeymoon in London and the South.

Chemists complain that liquid ammonia is often sold by other retailers in plain bottles when supplies in such containers have been refused at a pharmacy.

Miscellaneous

COMMITTEE ON POISONS.—The name of Mr. W. A. C. Goodchild, an assistant secretary in the Scottish Office, has been added to the list of members of the Committee appointed to consider whether modifications are necessary or desirable in the Poisons and Pharmacy Acts (*C. & D.*, July 24, p. 164).

GUILD OF PUBLIC PHARMACISTS.—A preliminary list or register of public pharmacists has been issued by the Guild of Public Pharmacists. A prize of £5 is to be awarded by the Guild for the best essay (limited to 4,000 words) on the details of a dispensary and laboratories for a hospital of 400 to 500 beds; particulars may be obtained from the secretary, Mr. A. H. Jenkin, 64 Wray Crescent, London, N.4.

EXCESS PROFITS DUTY.—The Commissioners of Inland Revenue have issued a notice drawing attention to the provisions of Section 38 of the Finance Act, 1926. Under the terms of that section, after September 30, 1926, no assessment of duty can be made (except in a case of fraud or wilful default), and no claim for relief from or for reduction or repayment of, duty can be entertained or allowed except in the case of an owner of a trade or business whose case has been notified as an undetermined case. Notification that a case is to be

regarded as an undetermined case may be given by the Commissioners or the owner not later than September 30, 1926.

IN THE COURTS.—At Scarborough, on August 18, William H. A. Harris, described as a chemist's assistant, was fined 20s. for failing to obtain an unemployment book from the Ministry of Labour.—At Skipton, recently, John Foster was sentenced to three months' imprisonment for stealing by a trick the sum of 8s. 8d. from Mr. Charles C. Dutton, chemist and druggist, Addingham. It was stated the prisoner and another man bought small quantities of mercury and nitric acid from Mr. Dutton, and the "half-crowns" tendered in payment was afterwards found to be silvered pennies.—At North London Police Court, on August 25, John Allen, Battlesland Street, N., was fined 10s. for a street sale of half a pint of carbolic acid not duly labelled. The label bore the word "Graves."

FALSE PRETENCES.—At Lytham, on August 24, Margaret Cunningham, alias Allen, was sentenced to a month's imprisonment for obtaining money by false pretences. It was stated that the accused called at various houses in question and sold bottles which, she said, contained thyme and peppermint. It was subsequently found there were no such ingredients.—At Tower Bridge Police Court, London, on August 25, Lewis P. Mason (61) was sentenced to nine months' imprisonment on a charge, among others, of obtaining by false pretences a Goerz Tenax camera from Mr. G. L. Hutt, chemist and druggist, St. John's, Worcester. Mr. Hutt's evidence showed that the camera had been advertised for sale, and that the accused had replied from a London address. Previous convictions were proved.

Scottish News

Brevities

At Jedburgh Sheriff Court, recently, Mr. C. P. Bayne, chemist and druggist, High Street, was fined £2 or seven days for using a motor-car the licence for which was not then in force.

The Aberdeen and District Pharmacists' Golf Club held their annual outing to Banchory on August 15. At tea, Mr. W. F. Hay occupied the chair. A hearty vote of thanks was given to secretary Mitchell for his excellent arrangements. The prize winners were (1) Mr. J. McConnach, (2) Mr. Ian Fraser, (3) Mr. W. G. Mitchell.

Edinburgh

The article on "Glycerin Famine" in a recent issue of the "Evening Dispatch" has not resulted in a noticeable increase in retail sales.

The next outing of the Edinburgh Chemists' Golf Club, which takes place over Broomknowe on September 1, should settle who is the winner of the Mackay trophy.

Irish News

Brevities

Mr. Thomas O'Connell, chemist's assistant, son of Mr. T. O'Connell, Kinsale, was drowned while bathing at Kinsale.

At Letterkenny (County Donegal) District Court, on August 19, before Justice Walsh, Robert Stuart, R.D., was prosecuted at the instance of Gertrude Rutland, an inspector of the Pharmaceutical Society of Ireland, for an alleged undertaking to compound or dispense medical prescriptions, not being legally qualified to do so, contrary to the Pharmacy (Ireland) Act of 1875. On the application of the defendant's counsel (Mr. Wm. Kelly), the case was adjourned.

At a recent meeting of the Council of the Irish Industrial Development Association held in Dublin, instances of the use of the words "Irish" and "Shamrock" on imported toilet articles by certain Belfast traders were considered by the Council, who instructed the secretary to bring the trade practices to the attention of Northern manufacturers producing like commodities.

Legal Reports

Deficient Lime Water.—At Old Street Police Court, London, on August 24, William Fox & Sons, Ltd., chemists, 109-113 Bethnal Green Road, E., were summoned for selling lime water which was deficient in lime to the extent of at least 65 per cent. Mr. Rickett, prosecuting for the Poplar Borough Council, stated that the defendant company carried on business in what he might term a very large way. The assistant inspector asked for a sample of lime water, and was charged 1½d. It was supplied from a stoppered bottle, which was about half full. Mr. H. Glyn-Jones, barrister, who defended, said that his clients' business had been in existence 114 years; they had six shops, and innumerable samples had been taken. A huge number of National Insurance prescriptions had been dispensed without complaint. Lime water was difficult to keep and prepare. The Magistrate: Do you manufacture yourselves? Mr. Glyn-Jones said they did, and the lime from which the sample was made was purchased as recently as December, with a warranty. They could not rely on the warranty, because they had used the lime. An order for payment of £3 3s. costs was made.

Meat and Malt Wine Case.—At Salford, on August 25, Frederick James Woodroffe, baker and confectioner, Higher Broughton, was summoned under the Sale of Food and Drugs Act, 1895, for having sold a bottle of extract of meat and malt wine, which was alleged to be not of the nature, quality and substance demanded; and the Premier Drug Co., Ltd., of Marwood Street, Hightown, Manchester, were summoned for aiding and abetting. Mr. W. H. Robinson, of the Town Clerk's department, prosecuted; Mr. Wingate Saul, K.C., appeared for the defence. Mr. Robinson explained that the wine contained 16.4 per cent. of total sugars, and 2.4 per cent. of extractive matter. The "extractive matter" contained 0.06 per cent. of phosphate anhydride, indicating the possible presence of not more than 2 per cent. of a mixture of meat and malt extracts. The sample was, therefore, deficient of 60 per cent. of the minimum amount of meat and malt extract. It was submitted by the prosecution that this was not a meat and malt wine, and that the composition in the bottle was that of an ordinary flavoured cordial, although the label read: "Extract of meat and malt wine. Guaranteed prepared from Liebig's extract of meat. This wine will be found invaluable as a stimulant to digestion, a tonic and a food. Non-alcoholic." Mr. H. H. Bagnall said that the liquid in question was merely a flavoured cordial. Mr. Saul: Your 3 per cent. standard is not based on any examinations you have made yourself?—That is so. Do you agree that there is no legal standard for meat and malt extract?—No legal standard. I would gather from your evidence this was a very low quality of meat and malt extract?—From my standard. Mr. G. D. Elsdon, Lancashire county analyst, supported Mr. Bagnall's views. Dr. Ramsbottom, assistant medical officer of Salford, said a wine was no wine unless it contained alcohol. The food and tonic value in this sample were practically negligible. For the defence, Mr. Wingate Saul said that before anybody could be convicted of aiding and abetting it had to be proved that the person charged with aiding and abetting actively took some part in Mr. Woodroffe selling something to a customer to the prejudice of that customer—something not of the nature and quality demanded. There was not an atom of evidence that the supplying defendants knew what the contents of the bottle were. "The label," Mr. Saul insisted, "makes it quite clear that the person who is buying the contents of this bottle is buying something that is non-alcoholic. There is the word 'wine,' and the word 'non-alcoholic' on the label; in other words, you have the exact words that are used in the Ministry's order; words that are used throughout by Mr. Hancock in his report, and also by the Government chemist, who gives tables of non-alcoholic wines." Mr. Saul held that the prosecution had not established its case, as there was no legal standard. The stipendiary magistrate said that on the legal points raised by Mr. Saul the summonses would be dismissed, but he was sorry that people should be imposed upon in this way.

New Companies and Company News

P.C. means Private Company and R.O. Registered Office

BRITISH MALT PRODUCTS CO., LTD. (P.C.).—Capital £46,000. Objects: To acquire the businesses carried on at Dunbar, Accrington and London, under the styles of the British Malt Products Co., J. T. Bayley & Co., and the Standard Malt Extract Co., and all or any of the assets of the said firms and the shares in Macadams, Ltd., . . . and to carry on the business of maltsters, malt extract manufacturers, . . . exporters and general merchants, etc. R.O.: 1 Market Street, Bermondsey, London, S.E.1.

FREEMAN'S COUGH MIXTURE, LTD. (P.C.).—Capital £5,000. Objects: To acquire that part of the business of J. & E. Freeman, Ltd., which comprises certain medicinal preparations known as "Freeman's Cough Mixture" and "Freeman's Anised Cough Mixture for Children," and in particular the recipes and full information as to the processes of manufacturing and the right to manufacture and deal in the same. The first directors are: J. H. Freeman, manufacturing chemist, and E. A. Freeman, manufacturing chemist. R.O.: 109 Icknield Street, Birmingham.

MAGADI SODA, LTD.—The directors announce that, in consequence of orders received, they have telegraphed instructions to their manager at Lake Magadi to expedite the resumption of production at the lake. In the directors' annual report of June last it was stated that production was temporarily stopped in consequence of the market position in the East and the necessity for considerable repair and new construction work.

THE PRIMO DRUG CO., LTD.—A meeting of creditors was held on August 20 at the Grand Hotel, Manchester. The chair was occupied by Mr. S. Hatton, the liquidator, who reported that the ranking liabilities were £425 due to unsecured creditors, and the assets, which consisted mainly of book-debts, were estimated to realise £253. There as a debenture in existence for £650, and consequently there was no surplus available for the unsecured creditors. The company was formed in 1922, with a nominal capital of £3,000 (of which £2,500 had been issued), to take over a business which had previously been carried on by Mr. M. Matz, to whom there were issued 2,000 fully paid shares as consideration for assets. Mr. Matz had since disposed of his shares. The meeting was adjourned for a week. The following are among the creditors:—Jeffries, Miller & Co., Ltd., £260; Griffiths, Formoy & Co., Ltd., £15; Price's Soap Co., Ltd., £15.

STEPHEN SMITH & CO., LTD. (HALL'S WINE).—The annual meeting was held on August 23 at 51 Malmesbury Road, Bow, E. Sir Henry Hall, who presided, in moving the adoption of the report and accounts (*C. & D.*, August 21, p. 354), said that the balance-sheet was the strongest they had ever presented. Their net profit was £26,000 less than in the previous year, but that was due, first, to the allowances they had to make to their agents on the reduction in the selling price of Keystone Burgundy of 6d. per flagon, and, secondly, to the increase in their expenditure in advertising. With regard to the allowances to their agents, this concession enabled the agent immediately to reduce the price to the consumer because he had no old stock at the higher price to dispose of. That policy was therefore beneficial to the agent. It also assisted the company, because the agents could purchase their requirements up to the day of the reduction without risk of being landed with large stocks at high prices, so that there was no loss of trade through agents holding off buying to anticipate the reduction. During the year they had reduced the selling price of Keystone Burgundy to the consumer by 6d. per flagon. Shareholders would realise what that cost the company when he mentioned that they had 15,000 agents to whom allowances had to be made. Their turnover for the year was within 5 per cent. of the previous year. The business was thoroughly sound. Lieutenant-Colonel F. F. McCabe, M.B., seconded the resolution, which was unanimously agreed to.

Poisonings

THE following cases of fatal poisoning, among others, have been recorded since our last report:—

An inquest was held at Flint, on August 24, on the body of Mary McCormick, Salisbury Street, Flint, who died from the effects of drinking carbolic acid. Mr. C. H. Wright, chemist, Trelawney Square, giving evidence, said that the woman came into his shop and asked for sixpennyworth of carbolic acid. He asked her what she wanted it for, and she replied, "For killing insects." She brought a plain bottle, and witness told her he could not serve it in that bottle. An open verdict was recorded.

At Lincoln, on August 20, evidence given at an inquest on Tom Ward, an engineer, showed that the cause of death was inhalation of the fumes of potassium cyanide. It appeared that Ward lighted a spirit lamp under a tin containing the cyanide in a greenhouse with the object of killing insects on plants. Mr. William Harby, chemist and druggist, West Parade, said that Ward purchased the cyanide from him in cake form. It was generally dissolved in water and sprayed. A verdict of "Death by misadventure" was recorded.

In the course of an inquest held at Great Harwood, on August 21, the question arose as to the efficacy of the average disinfectant and its poisonous effect. A patient suffering from enteric fever had drunk half a bottleful of disinfectant as supplied by the District Council for household purposes. A medical witness said that the liquid was watered down by the department, and was more an irritant than a poison. Taken in small quantities it would not poison. A verdict of "Suicide whilst not of sound mind through ill health" was returned.

The Sheffield coroner held an inquiry recently concerning the death of George H. Franklin and Beatrice M. Franklin, the infant children of George and Charlotte Franklin, Gleadless Road. Mrs. Constance Mary Williams, daughter of Mr. Edward Haining, chemist and druggist, Gleadless Road, said that she sold a bottle of carbolic acid to Mrs. Franklin, who asked the price of the bottles for disinfecting purposes. They were entitled to sell it freely so long as it was labelled. There was nothing strange in the woman's demeanour. The police surgeon said the *post-mortem* examination established that death was due to carbolic-acid poisoning. The coroner committed the mother for trial after a verdict of "Wilful murder."

The Birmingham coroner held an inquest, on August 24, on the body of Mrs. Mary A. Brown, Snitterfield, who died at the Birmingham General Hospital on August 21 during an operation. Dr. S. Adams said the general condition of Mrs. Brown was good. The Coroner: And you told the sister what anæsthetic you required? Witness replied in the affirmative, and added that it was a 2 per cent. novocain solution. The sister handed him the syringe full of a solution. The Coroner: And what at first led you to believe that something had gone wrong?—I had made an injection in five of those areas, and in the fifth the patient began to feel a sensation in the head and hands. I stopped, knowing that it was not a normal development with this solution. She then began to talk rapidly, though quite sensibly, and became incoherent. Then she had a severe fit lasting about half a minute. Continuing, witness said the patient had another fit, and he realised something had happened. He asked the sister if the novocain was all right, and she held up a small bottle that was on the table. By the label he realised that it was 20 per cent. cocaine hydrochloride. He took steps at once, but the patient ultimately died. The coroner, in summing up, pointed out that the nurse admitted having taken the solution out of the wrong bottle. The jury returned a verdict of "Death by misadventure," and added a rider to the effect that more care should have been taken by the dispenser and the nurse.

At Nuneaton, on August 20, the North Warwickshire coroner held an inquest on the body of Lewis Edmunds, a brickyard worker, who died the previous day. Ben Edmunds said that deceased was his brother and resided with him. On August 17 he complained of a pain in the stomach and said he would go to Clarke's drug shop for some "Indian brandy." The Coroner: You don't know

what it is made of?—No. It is a good thing for pains. Witness added that his brother took a small teaspoonful in water. Immediately afterwards he was taken with violent pains. Mrs. L. E. Clarke, wife of George Clarke, druggist, Queen's Road, said that Lewis Edmunds came to their shop and asked for one shillingsworth of "Indian brandy." It was a well-known preparation, consisting of one part of tincture of capsicum, three parts of tincture of rhubarb, and four parts of spirit of nitre. The Coroner: Are there any directions for taking it? Would it hurt if I took a whole bottle?—I don't know that it would do you any harm, but it might not be advisable. There is no recognised dose, and it can be taken in water or otherwise, as the patient likes. The Coroner: Do you mix this yourselves? You don't buy it wholesale?—We mix it ourselves. It is a standard formula. Dr. H. Bradbury said he was called to see Edmunds and found him in great pain, collapsed and looking very ill. He had made a *post-mortem* examination. A small ulcer was found in the stomach, and a perforation of it was, in his opinion, due to the strong dose of capsicum in the "Indian brandy." The cause of death was shock, following perforation of the stomach. A verdict of "Death from misadventure" was given.

Business Changes

THE EISEL TOILET CREAM Co. have removed from 34 Moorfields to more extensive premises at 79 Duke Street, Liverpool.

MR. F. W. BIDIE, chemist and druggist, Market Place, Banbury, has purchased the business of Mr. B. Carter, Ph.C., 10 Lemon Street, Truro.

MR. J. E. WHITAKER, chemist and druggist, has taken over the business of Mr. L. Benjamin, chemist and druggist, 57 Cold Bath Road, and the Spa Pharmacy, 18a King's Road, Harrogate.

MR. J. W. WOOD, chemist and druggist, 332 Deansgate, Manchester, has purchased the business of the late Mr. H. Sheldermine, chemist and druggist, 89 Every Street, and will conduct it as a branch.

Recent Patents

Abstracts of specifications of recently-granted patents for inventions. The complete specification (1s. each including postage) of any British patent can be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, on quoting the name of the patentee and the number of the patent.

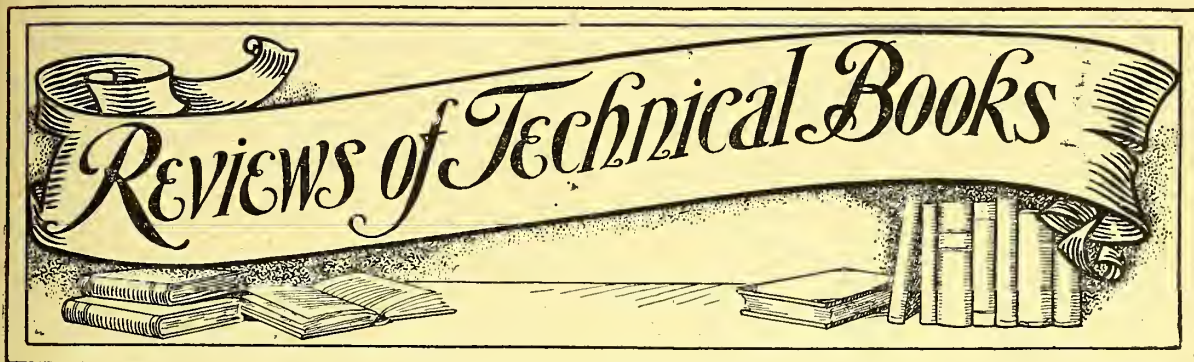
Pocket Atomiser.—A pocket atomiser comprising a cartridge for a compressed or liquefied gas, a reservoir for the liquid to be sprayed, and a mixing chamber. (R. M. L. Lemoine. 250,920.)

Face Powder.—A face rouge based on the use of an oil-soluble pigment (e.g., Soudan IV) insoluble in water, mixed with a dry powder (e.g., powdered silica) as a dispersive medium. (R. H. Sharp. 255,713.)

Glucoside of Squill.—A process for the manufacture of the pure glucoside of squill, consisting in treating an aqueous extract of the drug with a suitable absorbing agent (e.g., charcoal, Fuller's earth), and extracting the glucoside from the latter by means of an organic solvent. (F. Hoffmann-La Roche & Co., A.G. 255,689.)

COUNTERFEIT £1 Treasury notes are in circulation in the East End of London. The King's head is of a lighter colour than that on genuine notes, and the "One Pound" in the water mark does not appear on the counterfeits.

NATIONAL FUEL AND POWER COMMITTEE.—The President of the Board of Trade has appointed a committee, under the chairmanship of Sir Alfred Mond, Bt., to consider and advise upon questions connected with the economic use of fuels and their conversion into various forms of energy, having regard to national and industrial requirements and in the light of technical developments. All communications should be addressed to the Secretary, National Fuel and Power Committee, Board of Trade, Great George Street, London, S.W.1.



Dyestuffs and Coal-tar Products; their chemistry, manufacture and application, including chapters on modern inks, photographic chemicals, synthetic drugs, sweetening chemicals, and other products derived from coal tar. By Thomas Beacall, B.A., F. Challenger, Ph.D., Geoffrey Martin, D.Sc., and Henry J. S. Sand, D.Sc. Fourth edition. 10 in. by 6½ in. Pp. 168. 16s. London: Crosby, Lockwood & Son, 7 Stationers' Hall Court, Ludgate Hill, E.C.4.

The first edition appeared in 1915, and consequent on the acceleration of fine chemical manufacture in this country many changes are made in this edition. The work is one of a series of manuals of chemical technology, based, it is stated, on Martin's "Industrial and Manufacturing Chemistry." Many of the chapters of the present work are textually the same as those in the book cited, but brought up to date. The chapters that will interest our readers particularly are those dealing with inks, synthetic drugs, and photographic chemicals.

An Outline of Sales Management. By Charles C. Knights. 8½ in. by 5½ in. Pp. 186. 5s. London: Sir Isaac Pitman & Sons, Ltd., Parker Street, Kingsway, W.C.2.

The modern idea in large businesses of appointing one person to direct the sale of the goods has made the sales manager an important man, and developed the position until it has become a necessity. Mr. Knights, who is an authority on methods of selling goods, brings together in this book a good deal of useful matter regarding salesmen and the sales manager. With all of what is said everyone will not agree, but every reader will find useful advice and hints upon each page. The enthusiasm of the author will not be without its influence on those who study the book, but it is obvious that the man occupying the position of sales manager must have a larger share of natural aptitude than the average salesman. He must also be a man to whom can be entrusted the responsibility of employing usefully large amounts of capital. Those who are anxious to find out how salesmanship can be organised will find this book of great use.

The Modern Soap and Detergent Industry, including Glycerol Manufacture: A complete practical treatise on the manufacture of laundry, toilet, pharmaceutical, textile, abrasive, scouring and powdered soaps, also detergent compositions, and soap substitutes of all kinds. By Geoffrey Martin, D.Sc. Vol. III. *The Manufacture of Glycerol.* 10 in. by 6½ in. Pp. 400 (about). Illustrated. 30s. London: Crosby, Lockwood & Son, Stationers' Hall, Ludgate Hill, E.C.4.

This is the concluding volume of this work, the previous volumes having been reviewed in the *C. & D.*, April 24, 1924, p. 559, and November 21, 1925, p. 720. The manufacture of glycerin is the subject dealt with in the present work. The sections are devoted to (I) the manufacture of crude undistilled glycerol, (II) manufacture of distilled glycerol, (III) miscellaneous methods of producing glycerol, (IV) properties, technical applications, and statistics, (V) substitutes, (VI) com-

mercial valuation and analysis. The arrangement of the book is excellent and authorities and literature are freely quoted, and much labour must have been expended in searching for the information. This book contains the index of the three volumes.

Chemische Technologie der Nahrungs- und Genussmittel. By Dr. R. Strohecker. 9 in. by 6½ in. Pp. 264. Marks 22. Leipzig: Verlag von Otto Spamer.

Long past are the days when the preparation of foods pertained to the chief duties of each household, and now this forms the basis of one of the world's most important industries, with wide ramifications. The aim of this work is to present a brief description of the technical methods of preparation, storage and treatment of foods in use, with special reference to the chemical processes involved in these various procedures. The subject-matter is dealt with in twenty-seven chapters, each devoted to a specific group of foods, condiments, or beverages—e.g., meat, eggs, cheese, vegetables, tea, wine, vinegar, mustard, spices, sugar, mineral water and lemonade, including a chapter on tobacco. In addition to describing the various characteristics of each foodstuff or beverage, as well as its chief constituents, the author gives details of the sources from which each is obtained, together with the manipulations to which it is submitted before being placed on the market for consumption. The work is written in a clear, concise style, and its value is enhanced by the inclusion of numerous tables showing the constituents of certain foods and beverages, in addition to eighty-six illustrations, chiefly of apparatus used in the manufacturing processes.

Lehrbuch der physiologischen Chemie. Edited by Professor O. Hammarsten, assisted by Professors S. G. Hedin, J. E. Johansson, and T. Thunberg. Eleventh entirely revised edition. 10 in. by 7 in. Pp. 846. Marks 29.40. Munich: Verlag von J. B. Bergmann.

This new edition of the classical text-book on physiological chemistry by the eminent Swedish physiologist, whose name is so closely associated with so many investigations into the rôle played by various organic constituents, illustrates the tremendous advances made in this branch of science, to which English and American investigators have very largely contributed. It is not so much a text-book as a compendium of physiological chemistry, covering this wide field very exhaustively. Following an introductory chapter dealing with the general principles of physical chemistry in as far as they are applicable to physiology, proteins, carbohydrates, fats and phosphatides are dealt with separately, before describing the chemical constituents of the various animal secretions and organs. Each compound is described in detail, giving its occurrence, origin, constitution and, where known, its chemical synthesis, determination, properties, characters, reactions, and actions; in every instance with copious references to the original literature, a feature which greatly enhances the practical value of the work. The whole of this information is co-ordinated in such a way as to afford a true appreciation of the biological rôle and also of the interdependence existing between various biological products of the organism. The chapter on metabolism, by Professor J. E. Johansson (Stockholm), has been entirely

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re-written, and in addition to much valuable information regarding nutrition, including the part played by vitamins, contains many new and interesting views which present this problem under a different aspect.

Der Gaskampf und die chemischen Kampfstoffe. By Professor Dr. J. Meyer. 9 in. by 6 in. Pp. 436. 12 marks. Leipzig: Verlag von S. Hirzel, Königstrasse 2.

This work on gas warfare and the use of chemical agents as weapons gains added interest from the fact that its author, now a professor in the University of Breslau, was during the war attached as gas officer to one of the German armies in the field, and then in the same capacity to the army gas school. In the historical sketch on the use of noxious gases in warfare, the author quotes from the Pamphlet Papers Lord Dundonald's suggestion, made in 1855, to make use of burning sulphur. The general physical, chemical and pharmacological properties of a number of poisonous gases are then described, this part affording an interesting insight into the various factors which have to be considered when using these agents in warfare. The following chapters deal with the methods of using gases in the field, largely devoted to those employed by the Allies, while claiming for the Germans that the gases used by them and the means of employing them were much more effective; smoke screens; protective measures against poisonous gases; effects and successes attending gas warfare—a chapter in which several remarkable statements are made; gas warfare and the army; the moral aspects of the use of chemical agents in warfare; the future of gas warfare. The various chemical agents, their preparation and properties, are then dealt with in separate articles. The book is very well written, and the subject-matter is as well as interestingly presented, whereby the author makes no secret of his predilection for this form of warfare, for which he frankly states his reasons. Allied literature has been copiously drawn upon; indeed, a German work on this subject, based on German sources alone, has yet to be published.

A Textbook of Domestic Medicine and Surgery for Use in Temperate and Tropical Climates. By G. T. Wrench, M.D., B.S. (Lond.). 7½ in. by 4½ in. Pp. 339. 6s. London: J. & A. Churchill, 7 Great Marlborough Street, W.1.

Dr. Wrench is the editor of the recent editions of Chavasse's "Advice to a Wife" and "Advice to a Mother," and claims that the present work is complementary to these, so that the trio form a "comprehensive domestic guide to health and disease." The book begins with three chapters on fevers, divided into (1) sudden acute fevers, (2) fevers which begin gradually without characteristic signs, and (3) fevers which begin gradually with characteristic signs. Then follow chapters on diseases not characterised by fever, diseases diagnosed by their locality, and accidents and first-aid. The book is written in a simple style suited for the laity, and is somewhat vague as to treatment this is not a fault considering the class to whom the book is addressed. The style may be shown by a quotation. After expressing regret that convention prints an arrow on clinical thermometers at 98.4°, leading people to the mistaken impression that this is a normal temperature, the author writes:—

Here I must insert a warning about thermometers. They are not always accurate, and if they are two or four points out they may show slight fever when none is present. I have several times known people get alarmed at a continued slight evening fever due to a defective thermometer. A thermometer may be tested by putting it with two others under the tongue at the same time. If this produces doubt as to reliability a chemist will test it.

Elsewhere the author warns the reader not to allow a "chemist or quack" to treat gonorrhoea, evidently being unaware that a chemist would be acting illegally in Great Britain if he did so. The prescriptions given in the book are in English, and simple in character.

Die Methoden der organischen Chemie. By Professor Dr. J. Houben, assisted by numerous collaborators. Third, entirely revised and enlarged edition. Vol. I. 10½ in. by 7 in. Pp. 1368. Marks 66. Leipzig: Verlag von Georg Thieme, 15-19 Antonstrasse.

With the rapid advances made in laboratory technique, involving the introduction of so many new methods and processes, it is a matter of considerable importance to the laboratory worker to be able to consult a work in which he can rely upon finding a full description of those methods which have in practice been found to yield the best results. This is the object of this handbook, which aims at placing at the disposal of the chemist full information concerning the methods in use in laboratory work. The complete work consists of four volumes, of which the first volume of the revised edition has now appeared. The first part of this ponderous tome is practically a text book on analysis—elementary analysis, micro-analysis, gas, volumetric, colorimetric, gravimetric, and capillary analysis. The following thirty-eight chapters are devoted to descriptions, in which numerous illustrations of laboratory apparatus are included, of the manifold operations involved in chemical processes. The titles of some of these chapters will suffice to show the scope of the work: Heating; desiccation; filtration; crystallisation; distillation; sublimation, including an interesting description of micro-sublimation; autoclaves; crystallography; determination of melting points, boiling points, solubility, specific gravity, molecular weight, hydrogen-ion concentration by means of indicators; optical rotations, flash points, viscosity; dyes, their characters, uses and recognition. Each subject is exhaustively treated from the point of view of the application in actual practice of each of the methods or manipulations in question, and very complete details are given in every instance of the *modus operandi* to be followed in carrying out any of the many operations which are described. Briefly, it is a complete manual of laboratory technique.

Methoden zur Pharmakologie des Rückenmarks an Warmblütern. By W. Storm van Leeuwen. *Methoden zur chemischen Untersuchung von Geheimmitteln.* By K. H. Bauer. 10 in. by 7 in. Pp. 184. Marks 7.50. Berlin N 24: Urban & Schwarzenberg, 105b Friedrichstrasse.

This part forms one of the sections in the volume on chemical and physical methods of investigation employed in pharmacology, pharmacy and toxicology of Professor Dr. E. Abderhalden's "Handbuch der biologischen Arbeitsmethoden." The contents of the first chapter are indicated in the title: a description of the methods and procedures adopted in carrying out pharmacological tests on the spinal cord of warm-blooded animals. The second part, which deals with the methods employed in the chemical analysis of secret remedies, is of particular interest to pharmacists. Following some introductory remarks of a general nature regarding this category of remedies of undisclosed composition, and the difficulties attending the determination of their constituents, the author outlines the preliminary tests to be performed in order to establish the presence of inorganic and of organic compounds. Specific tests for the recognition of the former in the residue obtained on incineration are not given, since the usual analytical methods suffice for this purpose. With regard to the determination of organic constituents, these are divided into two principal groups: (1) Volatile compounds which can be isolated by distillation in a current of steam; (2) substances which can be extracted by solvents. The latter are divided into eight groups, and characteristic reactions are given for the compounds included in each group in tabular form. Tests for the recognition of the presence of distinct classes of organic compounds: acids, bases, aldehydes and ketones, alcohols, phenols, proteins, glucosides, are then given, followed by detailed descriptions of the specific tests to be applied for the determination of individual compounds included in each of these groups. The range of compounds for which tests are described is a very wide one, and includes a large number of modern synthetic remedies, drugs, and

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pharmaceutical extracts. Appended is a table of formulas, boiling and melting points, and solubilities of organic chemical compounds used in medicine.

Handbuch der Pharmakognosie. By Professor Dr. A. Tschirch. Vol. III. Parts 16 to 20. Pp. 813 to 1176. 11 in. by $7\frac{1}{2}$ in. Leipzig: Verlag von Chr. Herm. Tauchnitz.

The issue of these last five parts marks the completion of Professor Tschirch's Handbook of Pharmacognosy, a compendium of vegetable materia medica so vast in its conception and so admirable in its achievement that it will come to be regarded as a lasting monument to that eminent teacher and investigator, whom we are proud to reckon as one of our own profession. Apart from the concluding portion of the chapter on drugs containing bitter principles, the following six groups of drugs are described: Drugs containing substances which abolish certain reactions to taste; drugs used as diuretics; anti-sudorifics (represented by agaricum); drugs containing irritant (vesicant) substances; drugs containing dyes; and resinous drugs used in medicine. In the chapter dealing with drugs containing dyes these are arranged and described in accordance with the constitution of the chemical substances to which they owe their colouring matter. An interesting summary of present-day knowledge regarding chlorophyll is included in this chapter. In the article on shellac reference is made to some of its artificial substitutes and their recognition. The descriptive articles in the lengthy chapter on resinous drugs, which includes balsams, are particularly exhaustive, the incorporation of the results of recent research work on the constituents of these products being a specially interesting feature of a highly informative character. Our readers are already acquainted with the scope of this work, which it is impossible to submit to a review, embodying as it does the whole sum of our knowledge of drugs, systematically and critically presented; and including for each drug its etymology, origin, description of plant from which it is obtained, collection, commerce, characters, chemistry, adulterations, uses, history and bibliography, the whole richly illustrated, each of which would constitute a monograph in itself. The welcome announcement is made by the publisher that a general index of the whole work—which totals 3,900 pages—is in course of preparation, since its appearance, impatiently awaited by those who have learnt to appreciate and value the wealth of information contained in these volumes, will further enhance its importance as a unique and in every sense of the word a complete compendium, as well as invaluable work of reference on drugs.

The Scent of Flowers and Leaves—its Purpose and Relation to Man. By F. A. Hampton, M.A., B.M., B.Ch. $7\frac{1}{4}$ by $4\frac{1}{2}$ in. Pp. viij + 135. 6s. net. London: Dulau & Co., Ltd., 34-36 Margaret Street, W.1.

Mr. Hampton has written this book with the object of bringing the facts and theories concerning the scents of flowers and leaves into such a form as to make them easily accessible to gardeners and to the public. It will, we think, also prove useful to the chemist and botanist, because, although it is written in non-technical language, it reviews such theories of odours as have been hitherto proposed. It contains twelve chapters treating of the sense of smell, the composition and origin of scent, the distribution of odorous matters, the function of scent and its relation to insects, scent in relation with botanical characters, the classification of odours, our appreciation of perfumes, scent in the garden, the manufacture of perfumes, and, finally, a short chapter on history. The classification of odours is not an easy matter for anyone, and even an expert in perfumes is not a safe guide in the framing of a scheme for the benefit of those who are unacquainted with the chemical composition of the odorous materials. Two factors are almost necessarily influencing the subject to a greater or less degree without his being conscious of their operation, namely, the revived recollection of some previous experience of the particular scent and the extent of its concentration or dilution. The chapter on classification of scents is one which is particularly interesting. The author proposes a modification of

the scheme suggested by Kerrier von Marilaun about thirty years ago. There are many matters which will stimulate anew the æsthetic sensibility of all who are alive to the beauty of flowers and plants as well as of all those who have to do with odorous extracts and perfumes. For those who desire to acquire an enlarged outlook upon their flower garden, however small, Mr. Hampton has provided a delightful little book. We hope a second edition will soon be called for; then he will have an opportunity of amending a few matters which have escaped his attention. There are a few mis-spellings, such as "benzine" and "stereoptene," "Turpenoid" and "benzoid" are unsatisfactory. "Cinnamic alcohol" should be "Cinnamic aldehyde." Menthol is not a constituent of the mint (spearmint—*Mentha viridis*). Every reader, we think, will get an introduction from Mr. Hampton's work to either new odours, or new odorous plants, or new facts concerning them, or to a new conception of what a garden should contain.

Crystalline Form and Chemical Constitution. By A. E. H. Tutton, D.Sc., F.R.S. $8\frac{3}{4}$ in. by $5\frac{1}{2}$ in. Pp. 252, with 72 illustrations. 10s. 6d. net. London: Macmillan & Co., St. Martin's Street, W.C.2.

This book is indicative of the general trend of scientific thought and teaching in that it links up the essential facts of "Pure Crystallography" with the newer conceptions of "Atomic Structure" via x-ray analysis of crystalline compounds. As a result of the application of x-rays, many so-called colloids have proved to consist of submicroscopic crystals; thus purple colloidal gold "solutions," which do not deposit particles of gold during a lifetime, have been shown to contain minute perfect gold crystals of exquisite cubic structure. This confirms the principle laid down in 1782 by Abbé Haiüy, the father of crystallography, that "every single substance, definitely chemically constituted, possesses its own crystalline form." The importance of the newer methods of crystal analysis is evident in Chapter I, which deals with the main facts of crystallography. In this it is shown that the only sound criterion of crystalline form is afforded by the magnitude of the interfacial crystal angles. From these the "crystal elements" can be calculated, these being the relative lengths and mutual angles of inclination of the three imaginary axes. The symmetry of disposition of crystal faces is limited by the fundamental law of crystallography; that of "Rational Indices," which provides thirty-two classes of crystals grouped in seven systems of crystal symmetry (Cubic, Hexagonal, Tetragonal, Trigonal, Orthorhombic, Monoclinic, and Triclinic). On p. 22 is provided the modern explanation of the older "Law of Rational Indices," in that each crystal structure is essentially a lattice in space, the unit cells of the three dimensional "space lattice" being real tangible objects of a definite size occupied either by a single chemical molecule or more frequently by a small group of two, three, or four (rarely more) molecules of the crystallised chemical substance. The author's own researches are utilised in modifying "isomorphism" by showing that small but definite differences exist in the crystal angles of isomorphous salts. However, these indicate variation corresponding to increase in atomic size, and lead to the conclusion that chemical action is concerned with the outer electrons of the atom system. The work includes details of the improved methods used in crystallographic research, especially in terperometric measurements (within an eight-millionth of an inch). Other important subjects are the optical activity of crystals and the interrelated arrangement of atoms or molecules, as well as liquid crystals and co-ordination compounds, all of which are leading to concrete concepts of arrangements of atoms in chemical compounds, and it is shown that a substance may have different physical properties as a solid compared with its solution. The illustrations include space lattice of carbon atoms in diamond and graphite, which make one wish for examples of the whole fourteen types of space lattices, which represent some 230 print systems or space groupings of atoms

Reviews of Technical Books

in space, and which are now accepted as including all stereometric arrangements of atoms. A work of this character is necessarily highly technical in character, but it has the inestimable advantage of ushering in the application of crystal analysis to natural atomic arrangements. Hence it marks an end to artificiality and pure imagination in crystallography, and on that account is a welcome addition to the scientific study of the atomic constitution of chemical compounds.

Recent Advances in Physical and Inorganic Chemistry.

By A. W. Stewart, D.Sc. 8 $\frac{3}{4}$ in. by 5 $\frac{1}{2}$ in. Pp. 312, with 35 illustrations. 18s. net. Fifth edition. London: Longmans, Green & Co., Ltd., 39 Paternoster Row, London, E.C.4.

This work exemplifies the rapid progress of science, for each edition is virtually a new book. It contains twenty chapters, each dealing with a separate subject, twelve being entirely new. The atom is the centre around which the various subjects radiate and return, as all are concerned in the structure of atoms in atomic arrangements into molecules. The introductory chapter deals with the changing conception of the atom from an indivisible incompressible particle existing unchanged throughout time to collections of protons and electrons so complex that Soddy could ironically comment that the Chemical Society might safely offer a prize of a million pounds for a definition regarding the "element" or the "atom" which would be within the understanding of first-year students. The connection between x-ray spectra and atomic numbers is the subject of explanation with clarity and brevity in the second chapter. The author throughout the work declaims against dogma, but the statement on p. 19 that the x-ray spectra of isotopes are identical shows how easy it is to fall into erroneous statements where absolute identity is concerned. Several investigators certainly failed to find any spectral shift in x-ray spectra of isotopes until Aronberg found a difference of 0.0044 Å. in line L 4058 of lead from radium G (at. wt. 206.3) and ordinary lead (at. wt. 207), a result confirmed in this country by Merton. Though the spectral change in wave-length is only one-millionth of the total wave-length, yet it is one hundred times greater than that demanded by the quantum theory. Further, it is claimed by Harkins and Aronberg that the wave-length is the first chemical property in which it has been found that isotopes differ—i.e., the exact opposite to the dogmatic statement above. Apart from such minutiae, the narrative of advances in physico-chemical science is not only instructive, but readable and interesting. Thus radio-activity and radio-active disintegrations are brought up to date in three chapters before proceeding in five further chapters to isotopes (and isobars) and positive ray analysis (with mass-spectrographic measurements). Chapter XIII deals with the atomic nucleus (and its disintegration), Chapter XIV treats of the outer sphere of the atom (electron shells) which leads to Lewis-Langmuir valency conceptions and atomic models by Bohr, Langmuir, and Bury respectively. The chemical aspect is predominant in electronic structure of atoms, the description of the quantum dynamics of Bohr being much too scanty and out of date, as only circular orbits are represented. The new chapters on active hydrogen, hydrides, and active nitrogen, have also a direct bearing on atomic structure and classification of the elements, while the effects of intense drying (Chapter XIX) show that many of our ideas of chemical dynamics are at fault. The penultimate chapter on Tesla-luminescence spectra illustrates once more how artificial are our chemical subdivisions, for these relate to emission spectra of carbon compounds (organic chemistry) as applied to the elucidation of union atoms into molecules. The final chapter reviews the progress of scientific views on atomism. The succession of editions of this book in itself shows that it fills a gap in the insatiable demand for more and more knowledge as to the trend of scientific discoveries, and it certainly can be recommended to students of science who wish to progress beyond text-book physics and chemistry.

Handbuch der praktischen und wissenschaftlichen Pharmazie. Edited by Privy Councillor Professor Dr. H. Thoms, assisted by eminent contributors. 10 in. by 7 in. Parts 1-14 (Vol. I-IV). Berlin N. 24: Urban & Schwarzenberg, 105B Friedrichstrasse.

Professor Thoms has set himself the task of compiling a compendium embracing the entire field of knowledge, as well as the manifold practical applications, covered by the word pharmacy. His work, in fact, aims at supplying a complete pharmaceutical library in the compass of six volumes, in the realisation of which he has been fortunate in securing the collaboration of a large number of experts and eminent teachers, to deal with those subjects coming within their own special provinces and in which they are acknowledged authorities. So far the first four volumes are complete, therefore it is possible not only to gauge the scope of the work, but also to recognise the eminently useful purposes it is designed to serve. The net has been very widely spread, and articles on many subjects not apparently germane to pharmacy have been included; this, however, merely serves to emphasise the many points of contact between pharmacy and other branches of science. The first volume treats of pharmacy as a calling, and is prefaced by an historical sketch. This is followed by an exposition of the German laws affecting the practice of pharmacy, as well as brief notes on the legislation in force in other European countries. The remainder of the volume is devoted to articles dealing exhaustively with the internal arrangement of a pharmacy and its laboratory, fittings, lighting, utensils and apparatus—the article on filling ampoules, for instance, contributed by Dr. C. Stich, extends to seventeen pages and contains numerous illustrations. Volume II is essentially a text-book on physics, dealing with physical theories and their practical applications: Determination of specific gravities, molecular weights, viscosity, refractive indices, optical rotations; the uses of the microscope, microphotography, etc. Chemistry is next dealt with in a series of articles devoted to such subjects as: Preparation of inorganic and organic reagents and their tests for purity; qualitative, quantitative, volumetric, electro-chemical, gas, and toxicological analyses; hydrogen-ion concentration; catalysis; colloidal chemistry; micro-chemistry; influence of light on medicaments; synthesis of medicinal agents; chemical tests for medicaments; biological methods of assay, the latter by Professor Dr. R. Wasicky. In separate chapters the methods of isolating and recognising alkaloids, glucosides, essential oils, fatty oils, waxes, resins, albumins, etc., are described, and this part is followed by a section devoted to foods, condiments and beverages. The second part of Volume III deals with technical products and processes—e.g., soaps, glass, paper, synthetic dyes and colours, indiarubber, inks, cements, pastes and glues, stain removers, fire extinguishers, to quote but a few titles. In Volume IV we are introduced into the realms of physiology, hygiene, and therapeutics, and such subjects as vitamins, enzymes, lipoids, hormones, bacteriology, disinfectants, infectious diseases, analysis of blood, urine, stomach contents, etc., bacteriophage, the Wassermann test, etc., are expounded. This volume also contains articles on the principles underlying pharmacotherapeutics, organotherapy, the actions of mixtures of medicinal agents, chemotherapy, the principles of serum and immunisation therapy. It is impossible within the compass of a review to do justice to a work covering so vast and varied a field and embracing so many branches of knowledge and their applications in practice, selected and presented with a definite object in view—to provide the pharmacist with a complete text-book to which he can refer for information on practically every conceivable subject coming within the ambit of his professional activities. The work also is a testimony of the high, almost ideal conception of pharmacy so steadfastly maintained by Professor Thoms, whose handbook is destined to occupy a place of honour in pharmaceutical bibliography.

Beauty Culture Formulas

THE demand for creams and lotions for "beauty culture" is probably now at its height. Good prices can be obtained for formulas for which any virtue can be claimed; and that being so there is no excuse for using tap water, and none for using inferior materials. Hairdressers are very critical, so much so that samples are often demanded for trial before a preparation becomes part of the stock-in-trade. Products should be at least neatly packed, and flaring labels are out of favour. There is no fortune to be made from the sale of a beauty lotion, because in this country such a preparation has never been popular enough to warrant the spending of large sums in advertising. Why this is so it is difficult to say, because the old-fashioned "almond milk" cannot be surpassed for keeping the skin healthy and supple. There is, however, a quiet demand for this preparation; and those who feel inclined to cater for it would be wise if they market it as "Lotion Aesthetique"—fancy names for fancy prices.

ASTRINGENT LOTIONS

There are several in use, the principal ingredient being alum. Whether, any lasting benefit is derived from their use is a question for the beauty doctor to answer. The use of the alum block after shaving tends to toughen the beard and skin, making the latter more susceptible to wrinkling, therefore, than before. (Then can be offered an anti-wrinkle cream.)

I

Alum	...	...	...	1 oz.
Potassium carbonate	...	...	...	4 oz.
Glycerin	...	...	...	2 oz.
Rose water	...	...	...	1 pint
Distilled water	...	...	...	to 1 pint

Dissolve the alum; add the carbonate, allow to stand about half an hour, then add the glycerin.

This formula may be objected to as unscientific, but it is one that is largely used commercially and is approved by users.

II

Alum	...	...	...	3 oz.
Borax	...	...	...	oz.
Glycerin	...	...	...	oz.
Rose water	...	...	...	1 pint
Distilled water	...	...	...	to 1 pint

Compound as in formula I.

III

Alum	...	...	...	6 dr.
Boric acid	...	...	...	2 dr.
Simple tincture of benzoin	...	...	...	2 dr.
Glycerin	...	...	...	1 oz.
Rose water	...	...	...	1 pint
Distilled water	...	...	...	to 1 pint

Dissolve the alum and boric acid; add the glycerin and benzoin. shake two or three times, then strain through calico to clear any free gum.

This formula was to meet the inquiry for a lotion with a soluble (?) precipitate, and was found to be most popular.

ASTRINGENT LOTION (FOR ENLARGED PORES)

Distilled witch hazel	...	...	...	1 pint
Boric acid	...	...	...	1 oz.
Glycerin	...	...	...	1 1/2 oz.
Menthol	...	...	...	3 gr.
Rectified spirit	...	...	...	3 oz.
Perfume	...	...	...	a trace
Distilled water	...	...	...	to 1 pint

For use after face massage.

EAU D'ORANGEUR

Potassium carbonate	...	...	...	1 oz.
Rectified spirit	...	...	...	2 oz.
Orange flower water	...	...	...	1 pint
Colour (for pale yellow)	...	...	...	q.s.
Distilled water	...	...	...	to 1 pint

This is for removing the natural grease of the skin to prepare it for treatment. The lotion is applied to the skin, and the massage emulsifies the oil, which is wiped away.

THYMOL LOTION (FOR RED NOSES)

Hydrogen peroxide, 20 vols.	...	...	...	4 oz.
Thymol	...	...	...	3 gr.
Rectified spirit	...	...	...	1 oz.
Distilled water	...	...	...	to 1 pint

Note.—If colour is required it must be one which will not oxidise.

As a rule, the beauty doctor gives advice on dietetics, for which this lotion gets the credit.

EYE LOTION

Although this should not be classed as a toilet preparation, it is often asked for; the bottle should have directions for use attached.

Boric acid	...	...	...	2 dr.
Zinc sulphate	...	...	...	10 gr.
Distilled witch hazel	...	...	...	2 oz.
Glycerin	...	...	...	1/2 oz.
Distilled water	...	...	...	to 1 pint

BORAX SOLUTION

A 5 per cent. solution.

SKIN TONING SOLUTION

Zinc oxide	...	...	...	2 oz.
Mucilage of tragacanth	...	...	...	1 oz.
Glycerin	...	...	...	1/2 oz.
Rose water	...	...	...	to 1 pint

Strain through butter muslin, this will remove any coarse powder which may have escaped the pestle.

This is not a liquid face powder, but is for treating a florid complexion.

CALAMINE LOTION

There are various formulas for this, that of one of the London Hospitals, modified by the use of rose water as the diluent, being typical.

Calamine	...	...	...	2 oz.
Zinc oxide	...	...	...	1 oz.
Glycerin	...	...	...	1 oz.
Rose water	...	...	...	to 1 pint

Mix, and strain through butter muslin.

SUNBURN CREAM

This is really excellent for relieving the smart of sunburn. It must, of course, only be applied after exposure—this is important, as fat of any description applied before exposure is detrimental.

Liquid paraffin	...	...	...	1 oz.
Peach kernel oil	...	...	...	1 oz. (2)
Lanolin, hydrous	...	...	...	1/2 oz.
Lime water	...	...	...	2 oz. (4)
Borax	...	...	...	1/2 dr.
Tincture of benzoin	...	...	...	2 dr.

Make an emulsion.

Quantities in parentheses give a thinner cream.

CLEANSING CREAMS

These are merely adaptations of paraffin cold creams; they should be milled when cold, not only to give a better appearance but also to allow them to spread easily. The pots should be filled by machine.

I

Petroleum jelly, white	...	...	...	2 oz.
Stearic acid	...	...	...	2 dr.
Beeswax, white	...	...	...	1 1/2 dr.
Borax	...	...	...	20 gr.
Water	...	...	...	1/2 oz.

The stearic acid not only improves the appearance, but also holds the water when milled. To help to keep the "secrets" of the trade, if using a geranium perfume the cream should be labelled "Jasmin Cleansing Cream."

II

Petroleum jelly, white	...	...	...	3 oz.
Stearic acid	...	...	...	2 1/2 dr.
Beeswax, white	...	...	...	2 1/2 dr.
Hard paraffin	...	...	...	2 dr.
Liquid paraffin	...	...	...	3 dr.
Sodium carbonate	...	...	...	10 gr.
Borax	...	...	...	10 gr.
Water	...	...	...	1 1/2 oz.

III

Petroleum jelly, white	2 oz.
Liquid paraffin	2 oz.
Beeswax	1 oz.
Hard paraffin	$\frac{1}{2}$ oz.
Water	2 oz.
Borax	$\frac{1}{2}$ dr.

MESSAGE CREAMS (FOR USE BY HAND)

If wanted for reducing tissue (by massage), the cleansing creams will meet requirements. A preference is, however, sometimes shown for a firmer cream, which when applied to the skin and massaged for a short time, becomes oily.

Beeswax, white	1 oz.
Hard paraffin	1 oz.
Petroleum jelly, white	$\frac{1}{2}$ oz.
Liquid paraffin	5 oz.
Water	$\frac{1}{2}$ oz.
Borax	$\frac{1}{2}$ dr.

If for increasing tissue, the following should be supplied:—

Petroleum jelly, white	4 oz.
Beeswax	6 dr.
Lanolin, hydrous	1 oz.
Peach kernel oil	$\frac{1}{2}$ oz.

This may be coloured pale pink with oil-soluble red.

VIBRO MESSAGE CREAM

The ordinary creams are too thick for use with the vibro machine; not only do they tend to clog it, but they give the vibro pad too much "grip."

Beeswax, white	3 oz.
Hard paraffin	1 oz.
Liquid paraffin	10 oz.
Water	8 oz.
Borax	2 dr.

Mix as a cold cream and pot just before it sets; do not mill this formula.

Another name for combined cleansing and massage cream is "Combination Cream."

ORANGE SKIN FOOD

Lanolin, hydrous	1 oz.
Petroleum jelly, white	$\frac{1}{2}$ oz.
Petroleum jelly, yellow	$\frac{1}{2}$ oz.
Liquid paraffin	1 oz.
Hard paraffin	2 dr.

To be well milled. For perfume add synthetic neroli; for "lemon" add lemon juice while milling, the juice and liquid paraffin to be $\frac{1}{2}$ oz. each.

This formula gives a soft cream, which enables it to be absorbed without undue massage; it serves well as a tissue cream, but the following is more usual.

TISSUE CREAM

Petroleum jelly, white	2 oz.
Petroleum jelly, yellow	2 oz.
Hard paraffin	$\frac{1}{2}$ oz.
Beeswax	$\frac{1}{2}$ oz.
Lanolin, hydrous	1 oz.

ANTI-WRINKLE CREAM

Lanolin, hydrous	$\frac{1}{2}$ oz.
Petroleum jelly, white	6 oz.
Petroleum jelly, yellow	8 oz.
Distilled witch hazel	5 oz.
Hard paraffin	$\frac{1}{2}$ oz.

EYE CREAM

Petroleum jelly, pale yellow	6 dr.
Deodorised coconut oil	4 dr.
Lanolin, hydrous	2 dr.
Cocoa butter	2 dr.
Peach kernel oil	2 dr.
Hard paraffin	2 dr.

This is a massage cream and skin food combined, for treating the hollows round the eyes. A cream is needed which liquefies by heat of the hand; ordinary creams "pull" too much. A little cream, the size of a pea, is rubbed into the palm of the hand to melt it, then applied with the tip of the little finger. A stearate from coconut oil can replace the oil in this and the cuticle skin cream formula.

EYELASH CREAM

Petroleum jelly, pale yellow	1 oz.
Peach kernel oil	2 dr.
Hard paraffin	$\frac{1}{2}$ dr.

To be applied to the eyelashes with a cosmetic brush, the lashes to be brushed upwards to help the curl. The brush should be supplied with the cream, and shaped like a miniature tooth-brush.

CUTICLE SKIN CREAM

Petroleum jelly, pale yellow	$\frac{1}{2}$ oz.
Deodorised coconut oil	1 oz.
Hard paraffin	1 dr.
Stearic acid	2 dr.
Lanolin, hydrous	1 dr.
Water	2 dr.
Borax	5 gr.

The natural heat of the body readily softens the coconut oil when applied; this oil quickly softens the hard skin, allowing it to be easily wiped away with a soft cloth. For removing dry, withered skin.

VARIOUS OILS

Brilliantine oils should contain at least 33 $\frac{1}{3}$ per cent. of peach-kernel oil, and be named "Carnation," "Joni-quil," "Honeysuckle," etc.; "Jasmin" and "Violet" are too ordinary.

"Tissue Oils" are liquid paraffin, usually tinted pink, without perfume.

"Vapour Oils" are used in permanent waving machines, and are strong solutions of potassium carbonate in distilled water. The carbonate gives the water a much greater viscosity, and when the bottle is tilted slowly the solution looks like oil. A 10 per cent. solution meets the demand as a rule, although some contain 15 per cent.

"Balsamic Oils" are solutions of potassium carbonate (10 per cent.) and borax (10 per cent.) in distilled water; they are used in permanent waving machines as the "Balsamic Oil Process." The layer of white powder in a "balsamic pad" is borax.

PERMANENT WAVING LOTIONS

These are weaker solutions of the "oils." The latter are too strong for continual use; if applied every night they would bleach the hair. Formulas have already been published in the *C. & D.*; here is another one which has found favour among retailers:—

Potassium carbonate	2 dr.
Borax	2 dr.
Isopropyl alcohol	5 oz.
Water	to 1 pint

The label must have suitable directions.

SETTING LOTIONS

In the highest class of saloon rectified spirit is still used, but its cost makes it prohibitive for cheaper trade, and isopropyl alcohol or industrial spirit is used instead. Industrial spirit must be denatured and permission to use it obtained. Setting lotions for the retail trade are usually used with the "Marcel" or other wavers. The hair is slightly damped with the lotion and the hot curlers applied. Permanent waving lotions should be labelled as being used in that way also. A few words on the method of "permanent waving" may be useful. The strands of hair are parted, and each one is wound around a bobbin-like spindle which is placed in a cylinder. These are heated by an electric current. "Vapour oils" or "balsamic oils" are used for damping the hair prior to it being wound round the spindle. The strong alkaline solution forms a sort of soap with the natural oil of the hair. The heat of the machine dries the soap, which stiffens the "wave," and even when shampooed afterwards it is not lost. The hair is dried, then slightly damped with the spirit and ironed. Most hair-waving operations will last at least four months. Bobbed hair is too short for the machine, so the lotions are used in conjunction with special combs; a net is placed over the hair, which is dried with warm currents of air. The hair is then ironed with warm irons. The formulas given in this article have all been supplied to hairdressers, who considered them equal to the best.

Personalities

MR. R. W. K. SIMISTER, chemist and druggist, Hay, has offered to present a silver cup for competition at the local horse show.

MISS S. GIFFORD, daughter of Mr. R. Lord Gifford, J.P., Ph.C., Blackburn, won the Mayor's silver cup in the ladies' lawn tennis competition on August 25.

ON completing half a century of service with Brandram Brothers & Co., Ltd., manufacturing chemists, Neptune Street, London, S.E., Mr. Charles Butcher has been presented by the directors with a gold watch, suitably inscribed.

WE regret to learn that Mr. R. C. Cowley, Ph.C., Brisbane, Australia, has been laid aside with a slight attack of paralysis. Mr. Cowley was for some years principal of the Liverpool School of Pharmacy, and has many friends in this country.

MR. RICHARD SILLER, managing director of Lysol, Ltd., Raynes Park, London, S.W.20, is leaving on August 28 for a visit to the United States, combining business with pleasure. Mr. Siller may be addressed c/o the Lehn & Fink Products Co., 250 Park Avenue, New York City, U.S.A.

THE vacancy in Bradford Rotary Club caused by the recent resignation of Mr. H. W. Gregory, chemist and druggist (F. M. Rimington & Son, Ltd.), on account of ill health, has been filled by the election of Mr. F. E. Burdett, chemist and druggist (M. Rogerson & Son, Ltd.). Another member who has recently resigned, for business reasons, is Mr. G. B. Parker (Brooke, Parker & Co., Ltd., manufacturing chemists).

SIR RICHARD ROBINSON, D.L., J.P., President of the Pharmaceutical Society of Great Britain in 1905-07, and chairman of the London County Council in 1908-09, celebrated his golden wedding at his residence at Whitby on August 23. Sir Richard and Lady Robinson had with them their sons, daughters, and their fifteen grandchildren. It may be remembered that Sir Richard Robinson contributed an interesting account of his long public and business career in London to THE CHEMIST AND DRUGGIST of January 2.

Births

Notices for insertion in this column must be properly authenticated.

BOYES.—At 17 Brambledown, Crouch Hill, London, N., on August 14, Constance Effie (*née* Pearson), wife of George R. Boyes, B.Sc., A.I.C., Ph.C., of a daughter.

Marriages

ACHESON—WAUGH.—At Knock Presbyterian Church, Belfast, recently, James Acheson, son of Dr. S. E. A. Acheson, R.D., member of the Council of the Pharmaceutical Society of Northern Ireland, to Agnes Winifred Waugh.

LANCASTER—LAWTON.—At All Souls' Church, Leeds, on August 18, Harold Lancaster, M.P.S., son of Mr. John Lancaster, M.P.S., 65 Wensley Drive, Chapel-Allerton, to Katherine Mary Lawton, M.P.S., daughter of the late Mr. W. F. Lawton, Hull, and of Mrs. Lawton, 11 Blandford Gardens, Leeds.

MEGGESON—SHARP.—At St. Agnes' Church, King's Norton, Birmingham, on August 21, Joseph Ernest, eldest son of Mr. W. E. Meggeson, chemist and druggist (for many years dispenser at the Eye Hospital), to Dorothy Mary Sharp.

STEPHENSON—ROBERTS.—At St. Mary's Church, Abergavenny, on August 9, Robert Stephenson, chemist and druggist, to Nancie Isobel Roberts, chemist and druggist, elder daughter of Mr. H. T. T. Roberts, chemist and druggist, Abergavenny.

Golden Wedding

ROBINSON—THISTLE.—At the Parish Church, Whitby, on August 23, 1876, Richard Atkinson, eldest son of Mr. Henry Robinson, to Jane Wilson, youngest daughter of Mr. Thomas Thistle.

Deaths

BAYNTON.—At his residence in Russell Road, Mosley, Birmingham, on August 21, Mr. Charles Summers Baynton, chemist and druggist, aged fifty-nine. Mr. Baynton, who was born at Dudley, took up the study of medicine prior to qualifying as a chemist and druggist. He eventually purchased a photographic business in New Street, and carried it on for thirty-five years. In his younger days Mr. Baynton was an accomplished athlete, and in later times he became a leading member of the Birmingham Photographic Society. The death of two of his sons in an accident two years ago seriously impaired his health. He leaves a widow and two sons, one of whom is well known as an actor.

BRAND.—At Hatherley Road, Walthamstow, on August 18, after a short illness, Mr. Charles Brand, aged seventy-six. Mr. Brand was associated for many years with the firm of Thomas Hodgkinson, Prestons & King, manufacturing chemists, 262 Bishopsgate, London, E.C.2, as warehouse manager, retiring in 1923, after forty-four years' service. Mr. Brand was highly esteemed by all who came into contact with him, and his many friends will regret to learn that he was not spared to enjoy more years of well-earned retirement.

HIBBERT.—At Beckenham Cottage Hospital, on August 24, after an operation for appendicitis, Harold Francis Hibbert, son of Mr. F. J. Hibbert (managing director of Ralph L. Fuller & Co., Ltd., drug and chemical merchants, 21 Harp Lane, London, E.C.3), aged three.

HICKEY.—Recently, Mr. Patrick Joseph Hickey, L.P.S.I., Rathkeale, co. Limerick. Mr. Hickey passed the Licence examination in 1914.

MOORE.—On August 23, after an operation, Mr. Joseph Alexander Moore, M.A., High Beech, Lindfield (a director of Lewis & Peat, Ltd., produce brokers, 6 Mincing Lane, London, E.C.), only son of Mr. Joseph Moore, Hillsborough, Torquay, aged fifty-one.

NEILL.—At the County Infirmary, Armagh, on August 14, Mr. Samuel Neill, R.D. Mr. Neill was for thirty-seven years manager to Mr. J. W. Gray, L.P.S.I., English Street, Armagh. He was a P.M. of Abercorn Masonic Lodge, No. 299, a P.K. of R.A.C., No. 623, and a member of St. Patrick's Lodge, No. 623.

PATTERSON.—At Bangor, co. Down, on August 22, of pneumonia, Mr. David John Patterson, Ph.C. Mr. Patterson served his apprenticeship to Mr. J. M. Cherry, Newtownards, and extended his experience with Grattan & Co., Ltd., Belfast, J. & M. Poots, Newtownards, and J. S. Balmer, Ltd., Bangor. He opened business on his own account in Bangor two years ago.

STROTHER.—On August 21, Mr. Alfred Emmerson Strother, chemist and druggist, Pink Lane, Newcastle-upon-Tyne, aged fifty-four. Mr. Strother carried on business in Clayton Street West for some years before removing to Pink Lane. He leaves a widow.

WHITE.—At Brighton, on August 19, the widow of Lieutenant L. Woolmer White, who was killed on active service in 1914 (*C. & D.*, II, 1914, p. 477).

Wills

MR. WILLIAM HENRY FAULKNER, South Croydon, and of Faulkner & Winsor, general merchants, 23 Fenchurch Street, London, E.C., left £107,672 (net, £105,881).

MR. ROBERT DIXON STEELE, Thelema, Reservoir Road, Prenton, Cheshire, retired chemical manufacturer, left £74,304 6s. 6d., with net personalty £70,378 0s. 3d.

MR. JOHN WALTER COCKS, Warburton, Springfield Road, Torquay, retired pharmaceutical chemist, who died on May 22, left estate of the gross value of £10,806 16s. 5d., with net personalty £6,982 12s. 11d. The testator left £300 to each of his sons, Walter Rackwood and Frank Godfrey, £100 upon trust for each grandchild, £50 each to his wife and his daughter Elsie, and the residue of his property upon trust for his wife for life, with remainder as to two-fifths to his daughter and three-fifths between his said two sons.

Estimation of Iodine in Soluble Iodides

By Naval First-Lieutenant Pharmacist Carlos C. Coutinho, Lisbon

THE method of estimating iodine in soluble iodides adopted in the Belgian, British, French, German, Spanish and Swiss pharmacopœias is based on the precipitation of iodine as a silver salt. In the Belgian and German pharmacopœias the procedure is described: 0.2 gram of potassium iodide is dissolved in 2 c.c. of solution of ammonia and 13 c.c. of *N/10* silver nitrate added. The filtrate, after acidification with nitric acid, should not become opaque within ten minutes (hydrochloric acid, hydrobromic acid), or assume a dark coloration (thiosulphuric acid). This cannot be regarded as a method for the estimation of iodine, but merely as a means of determining the presence of chlorides, bromides or thiosulphates, and there is no advantage in using the volumetric solution of silver nitrate, of which 13 c.c. (*N/10*) correspond to 107 per cent. of chemically pure potassium iodide. The same applies to the assay of sodium iodide, where 14 c.c. of *N/10* silver nitrate is equivalent to a content of 105 per cent. of iodide. In the British and French pharmacopœias the method of applying the test is not given, and only the amount of *N/10* silver nitrate required to precipitate the iodide is stated. The methods

of Duflos and Fallières, based on the liberation of the iodine followed by distillation, always entail a certain loss of iodine. Very accurate results are obtained by the method of Villiers and Fayolles, which consists in setting free the iodine by means of ferric chloride, and determining the iodine, dissolved in an appropriate solvent, by titration with sodium thiosulphate. With chemically pure iodides this method yields results which are quite as reliable and accurate as those obtained by the gravimetric method. The method described by Paul God-



FIRST-LIEUTENANT PHARMACIST
CARLOS C. COUTINHO

frin, based on displacing the iodine by chlorine obtained by the action of hydrochloric acid on potassium bichromate, is of special interest, and we have found it sufficiently accurate to serve as a reliable volumetric method for the estimation of iodine. Godfrin recommends the following procedure: 10 c.c. of a 1 per cent. solution of potassium iodide, 1 c.c. of solution of potassium bichromate (1:10) and 15 drops of hydrochloric acid are mixed, and after a few minutes 18 to 20 c.c. of sodium acetate solution (10 per cent.), 50 c.c. of water and 2 c.c. of starch solution are added; now add, drop by drop, *N/10* solution of sodium thiosulphate until the blue colour is discharged. The whole must be vigorously shaken after each addition of sodium thiosulphate solution. In the course of our investigations we found that this method presented a serious drawback, in that the liberation of free iodine leads to the formation of a large amount of iodine vapour which does not go into solution on shaking the flask, thus entailing the loss of a small quantity of iodine. We succeeded in overcoming this difficulty by adding chloroform, to dissolve the iodine set free. Further, we use a 1:100 instead of a 1:10 solution of potassium bichromate. The modified method we finally elaborated, based on our experience, is as follows: Introduce in a 200 c.c. narrow-necked flask, provided with a glass stopper, 0.5 gram of the iodide to be assayed and 50 c.c. of distilled water; after solution has taken place, add 10 c.c. of chloroform, 1.5 c.c. of hydrochloric acid (sp. gr. 1.18-1.19) and 20 c.c. of potassium bichromate solution (1 per cent.). After shaking, the mixture is set aside for 20 minutes, whereupon 20 c.c. of sodium acetate solution (20 per cent.) and about 25 c.c. of

N/10 solution of sodium thiosulphate, in the case of potassium or sodium iodide, 30 c.c. in the case of ammonium iodide, and 20 c.c. for strontium iodide, is added, as well as 1 c.c. of starch solution. Titration is then completed by adding *N/10* sodium thiosulphate, drop by drop, shaking the whole vigorously after each addition, until the greenish colour of the liquid disappears, as well as the blue tint exhibited by the foam. The number of c.c. of *N/10* sodium thiosulphate required multiplied by the corresponding coefficient—3.32, 3, 2.9 or 3.415—gives the equivalent percentage of potassium, sodium, ammonium, or strontium iodide present. So long as free iodine is present in the liquid, the latter exhibits a green colour, while the foam produced on shaking is tinted blue; however, the end point of the reaction is readily apparent by the disappearance of the green colour, the liquid exhibiting a pale yellow colour, with a white foam. Comparative tests conducted with chemically pure potassium iodide prepared by us and dried at 180° C. yielded the following results: (1) Liberation of iodine by ferric chloride and extraction of the iodine with carbon tetrachloride, 99.95 per cent.; (2) Coutinho's modification of Godfrin's method, 99.93 per cent.; (3) method of the Swiss Pharmacopœia (iodine, chlorine and bromine), 100.01 per cent.; (4) gravimetric method (iodine, chlorine and bromine), 99.96 per cent. It will be seen that our method of estimating iodine in soluble iodides yields accurate results, and has the advantage of being readily applicable. Our tests have shown that it consistently yields concordant results, and therefore deserves to be taken into consideration for inclusion in future editions of the pharmacopœias.

Trade Notes

SELLING SPONGES.—S. Maw, Son & Sons, Ltd., 7-12 Aldersgate Street, London, E.C.1, are issuing with their sponges, and, on application, to chemists who have purchased sponges from them, a show-card (reproduced in the accompanying illustration) designed to promote sales. Printed in five colours, it is of a striking and artistic character, and has spaces for the insertion of minimum and maximum prices.

BRITOL SERIES.—C. D. Elsan Chemical Co., 34 High Holborn, London, W.C.1, call attention, on another page of this issue, to several Britol preparations, which they supply in quantity.

WIGGLESWORTH, LTD., Westthoughton, announce in their advertisement three new lines, the names and prices (wholesale and retail) of which they give. The margin of profit is good in each case.

BONUS OFFER.—Southall Brothers & Barclay, Ltd., manufacturing chemists, Birmingham, offer in this issue a special bonus, available until September 30, in connection with their Influenza Mixture, which is put up with several types of label.

SCHERING MEDICINAL PREPARATIONS.—A new price list of the medicinal preparations of Schering, Ltd., 3 Lloyd's Avenue, London, E.C.3, has been issued, and a copy will be forwarded on request to any chemist who has not received one. Attention is called to the new packings of Medinal (registered trade-mark), Atophan (registered trade-mark), levulose, and Veramon.



Information Department

INFORMATION WANTED

R/248. Anti-moth (in 2d. packets)	M/238. Conducto surgical dressings
M/208. "Busy Bee" corn plasters	F/258. Raras hair brushes
B/188. Imperial corn plaster	B/188. Universal ear caps
	R/78. Zepy pomade

Observations and Reflections

By Krayser III

Another Incertitude

is revealed on close study of the new Regulations under the Dangerous Drugs Act. My attention has been directed to the fact that the first amendment of Regulation 5 of the Principal Regulations withholds the benefit of the exemption "in the case of a preparation which is contained in the British Pharmacopœia, the British Pharmaceutical Codex, or the Drug Tariff," if any other preparation of the same alkaloid, or salt thereof, not so contained, is ordered as an ingredient of the same medicine. Thus, if any B.P. or B.P.C. preparation of morphine is ordered in conjunction with nupenther or other proprietary preparation of morphine, it will apparently be necessary for the doctor to indicate on the prescription the total amount of morphine he is ordering. How he is to calculate the amount and the chemist to check the figures I am not prepared to say. But it looks as though a skilled mathematician might have to be employed while the patient is waiting and in urgent need of relief.

Everything Points

to the continued necessity of the Pharmaceutical Society being maintained and strengthened as the central authority in connection with the sale of poisons. Government departments should realise that they cannot better secure the assistance they need in the making of poison-regulations than by relying upon the Society. But the best results cannot be obtained unless the Council of the Society is consulted at the earliest possible stage, rather than the latest. From what I can learn, there is no one connected with any of the Government departments which are interested in matters concerning poisons who can fairly be regarded as an expert on the subject. Why, then, should any department build up for itself a reputation for ineptitude? It will be necessary, in the public interest rather than ours, that the strongest possible case should be presented to the Departmental Committee in favour of adding to the Society's responsibilities instead of diminishing them.

No Doubt Exists

in my mind but that the majority of practising pharmacists do their best to fulfil their obligations with regard to the sale of poisons in a very careful and painstaking manner. I am quite in accord with your correspondent "Supersede" (*C. & D.*, August 21, p. 383) on this point. The question now arises, however, whether the exercise of the most painstaking care will suffice if we are to avoid all the traps provided by the D.D. Regulations. It may even lead different individuals to different interpretations, in view of existing differences of opinion as to what some of the official phraseology really means. When such a state of affairs is possible there must be something wrong with the Regulations. In further reply to "Supersede," let me explain exactly what I had in mind when I referred to cases of refusal to supply poisons. They were not instances of the kind he mentioned, where impossibility to comply with the legal conditions fully justifies refusal. I was thinking particularly of chemists who say they don't want to be bothered with the sale of poisons, and that they prefer to disoblige customers requiring such articles rather than take the trouble to comply with the necessary formalities. Think how it helps to encourage the granting of poison-licences to unqualified persons or firms dealing in horticultural requisites, when it can be urged that chemists in the district concerned refuse to stock and supply what is wanted in this direction.

Why Should I Object

to other people being authorised to supply what the public needs if I, the only person legally qualified to sell certain constituents of the compounds required, decline to meet a want which is proved to exist? The fact of the matter is that monopoly of any kind in business tends to disregard of the public convenience so far as the subject-matter of the monopoly

is concerned. Look at the Post Office arrangements, if an extreme case is wanted. But a case can be built up nearer home. Some time ago I heard the argument used that restriction of sales of particular lines of goods to chemists did not elicit an adequate response. Instead of endeavouring to make the most of the business so reserved, the chemist (it was declared) acts as though he said to himself: "Now that no one can procure those goods except from me, people will have to come to me for them, so I will display and push the sale of other lines." As an illustration of his point, this critic pointed to the lack of display in chemists' shops of proprietary articles containing scheduled poisons, and he held that this keeping out of sight the goods which none but chemists could sell proved his point. However this may be, I trust your readers will seriously reflect upon the tendency of a dog-in-the-manger policy, such as I have endeavoured to describe in few words, to arouse antagonism which, in time, may manifest itself in Government circles in ways difficult to counter.

"Plus de Punaises,"

which your contributor "Pharmatoura" found exhibited as a showcard in the window of a French pharmacy, could scarcely, I think, be matched in an English pharmacy to-day. I would not venture to say but that it might have been thirty or forty years ago. To deal effectively with this peculiarly obnoxious insect was a constant worry to the housewife of the days gone by, and the comparatively diminished interest in it which most pharmacists now experience is some measure of the improvement in household sanitation. Our name for this evil-smelling insect is a most offensive one. The French one, with its derived meaning of "stinking" or "fetid," is not much better. In the seventeenth century "punese," "punise," and "punice" were forms of the French name commonly used in this country. Another name, adopted from the Latin, was also used, namely, "cimiss" or "cimise." Some of your readers may have met with these names in their local dialects. That the name of "punese" was pretty commonly used we may infer from Butler's use of it in the third canto of "Hudibras," where he speaks of Sidrophel and "his talismanic louse" and

"His flea, his morpion, and punaise,
H'had gotten for his proper ease."

There is a passage in Sir Wm. Davenant's "The Man's the Master" which may be placed with Butler's:—

"My family feeds well, and then they sleep so soundly that puneses cannot wake 'em."

We May Still Elude

our own horrible name for this creature by using one which seems to have quite gone out of use. It is employed by Philemon Holland in his translation of Pliny's "Natural History." For the benefit of those who, like myself, have a relish for sixteenth-century English I will quote the passage in full: "Other vile creatures there are besides, which for their baseness I bash to name and relate in this place; howbeit, because so many authors with one consent have so constantly commended their medicinable properties, I make it a matter of conscience to passe them over in silence; considering that all our medicines proceed from that convenience and repugnance which is in the nature of all things. As wee may see for example in these punies or wall-lice (the most illfavoured and filthy vermine of all other, and which we loth and abhorre at the very naming of them) for naturally they are said to bee adversative to the sting of all serpents and principally of the Aspis: nay they are thought to be a countrepoyson against any venomous thing whatsoever: and folke ground their reason hereupon, because looke what day that Hens doe eat a wall louse, the same day there shall no Aspis have power to kill them." In some other of the books of this period the name of "wall-louse" seems to have been preferred. The employment of them in medicine has not been extensive. Dioscorides recommended them for certain forms of ague; they were used for the expulsion of leeches which had been swallowed, but Galen suggested that garlic should be used instead. I sometimes think that a psychologist of an adventurous turn of mind would find much matter for consideration if he would explore the history of therapeutics.

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Editorial Articles

The Position of Antimony

THE aspect of the antimony market has lately undergone a rapid change towards more stringent conditions, chiefly on account of the confirmation of reports relating to the chaos in China, which has affected both mining and transportation. The advance during the past few weeks was particularly pronounced, and it was reported that American importers have had to plead "force majeure" in respect of the fulfilment of contracts that had been entered into for June-July shipment, the main cause for this being apparently not only the floods that have prevented consignments from Changsha and the interior, but also the civil disturbances at the mining and shipping centres. There has, therefore, been a sharp reversal of the depressing conditions which prevailed over the spring period, as shown in our issue of April 10 (p. 532), the continuation of which made themselves decidedly felt with America rather overstocked and a generally slack trade demand. During June, Hamburg was, moreover, a very free re-seller on this side of Chinese regulus on comparatively low terms for near arrival. The course of the market so far this year has certainly been characterised by sensational fluctuations, as will be seen from the record of prices given below for regulus as well as crude metal and antimony ores:—

Per ton	January 2	April 1	July 1	August 21
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
English regulus ..	105 0 0	94 10 0 to 95 0 0	79 10 0 to 80 0 0	74 10 0 to 75 0 0
Chinese regulus spot ..	100 0 0	81 0 0	60 0 0	65 0 0
Chinese crude spot ..	65 0 0	54 0 0	40 0 0	46 0 0
Antimony ore 50% sulphide (per unit) ..	0 8 0	0 7 3	0 5 6	0 6 6

The last reduction made by English refiners for high-grade metal of £5 per ton about a month ago to £74 10s. to £75 was still relatively high compared with the current value for Chinese regulus; hence there has been as yet no alteration in English refined as a reflex of the stronger fundamental conditions brought about by adverse events in the Chinese industry. These were translated into a total recovery in the spot value of Chinese from the lowest of £6 per ton to £65, which figure was repeatedly paid of late, this also applying to parcels afloat. The most striking evidence of the strength of the market has been the fact that near shipment from China, which was almost unsaleable early in July has been selling lately at £58 up to £62 c.i.f. There has been a very keen demand on American and home account for near-at-hand parcels, with buyers at about £65, and Hamburg has also been in the market for good quantities. The position across the Atlantic has gathered considerable strength, stocks there in importers' hands having been reduced to very moderate proportions, being estimated at about 700 tons, while the shipments advised from China for June amounted to only 450 tons for the United States. In the face of a more active demand there, the available stocks are

for the most part held off the market, so that offerings of spot metal are exceedingly light, and the price for Chinese 99 per cent. was recently firmly established at 16 cents per lb. duty paid, while the two extreme points recorded this year were 25 cents and 9½ cents. It is apprehended that the difficulties of shipment already referred to will make the position stringent at least this and next month. Advices from China lately were to the effect that only little stock was left at distributing points such as Hankow and Shanghai, and the total of the stocks in China was comparatively small, having been estimated at roughly 1,500 to 1,700 tons, although it is claimed by some that quite considerable stocks are still held in the interior. The United States arrivals from China for the first five months of this year amounted to 6,685 tons, this making a monthly average of 1,337 tons, but, as already mentioned, the June receipts were only 450 tons, so that the total for the first half-year represents 7,135 tons, which, however, compares with 9,517 tons for the whole of last year. Although it was asserted that much of this year's arrivals were sold in advance and had passed into consumption, there was, nevertheless, a suspicion that in consequence of the almost entire absence of consuming demand during the second quarter of the year, trade needs had fallen off compared with the previous year, and that therefore considerable stocks were held back in either first or second hands in anticipation of a price recovery. Whatever the present American unsold surplus may be, the fact remains that there is now but little stock actually coming on offer, while there has been a sharp falling off in the arrivals, which threaten to continue abnormally light towards the autumn, and this is calculated to keep the market firm. Apart from the handicap to the movement of supplies in China, which has undoubtedly placed shippers in an awkward position and aroused much uneasiness among consumers, there was already a growing impression early in July that the depression had seen its worst, and it was then reported that a combination or agreement had been come to among Chinese producers to withhold stocks in the country, and in order to place the output under restrictions. Possibly the fresh outbreak of internal disturbances might be regarded as a blessing in disguise by producing interests in China, regardless of the vagaries encountered on the part of the merchant export trade.

Ointment Bases

ONE of the most troublesome subjects in pharmacological investigation is the most suitable basis to use of particular ointments. An investigation on the subject by Professor R. B. Wild, of Manchester University, has been carried on for many years. In 1911 a report was issued on the bases used for the ointments of the British Pharmacopœia, in which the protective and absorptive power of the ointments were investigated. The conclusions reached were in accord with usually accepted views that paraffin bases are hardly absorbed at all, that lard and olive oil are absorbed to a considerable extent, 15 per cent. after two minutes' rubbing, and anhydrous wool-fat 20 per cent. For a non-greasy basis a mixture of equal parts of glycerin of starch and hydrous wool-fat showed the greatest loss of weight. Two years after, Professor Wild and Mr. James Grier, M.Sc., reported on non-official ointment bases and on soft paraffin as a base. These investigators pointed out the chemical composition of the fat employed seems to be chiefly of importance in that the glycerin esters of the higher fatty acids and the cholesterin fats are absorbed more readily than the hydrocarbons. The statement was added:—

It does not, however, follow that all drugs are more easily absorbed from these bases, since we lack information as to the readiness with which they part from the drugs with which they may be combined; neither do we know what effect the volatility of certain drugs has upon the rate at which the base may give them up to the tissues, or whether a drug dissolved in the base behaves differently from one which is merely mechanically mixed with it.

The interval has evidently afforded opportunities for carrying out the research adumbrated in the 1913 report; as Professor Wild and Ivy Roberts, M.Sc., Ph.C., publish in the "British Medical Journal" (June 26, p. 1076) a report on the absorption of mercurials from ointments applied to the skin. Mercurials were selected for the investigation because of the ease with which the compounds can be quantitatively estimated. Miss Roberts had previously worked out the problems of accurate determination of mercury compounds when combined with fats or paraffins. A carefully weighed quantity of the mercury ointment was taken and rubbed into a definite area of skin for a definite time. The unabsorbed ointment was collected and the amount of mercury in it determined. The results summarised are as follows:—Under the conditions of these experiments it was found that when rubbed into the skin all mercurials were absorbed to some extent from all the bases tested. In all cases the greatest absorption took place from the lard basis, and the amount of absorption with the lard basis increases more with a prolonged rubbing than with other bases. Hydrous wool-fat was absorbed to a greater extent than lard, but the mercurial was not absorbed with it, so that the absorption of mercury was actually less than from a lard ointment of equal strength. The absorption from a paraffin base was always less than from a lard base. The amount of mercurial absorbed was proportional to the amount of mercurial in the ointment, at any rate up to 30 per cent. of the mercurial. Of the different mercurials examined the mercuric oxide was the most readily absorbed, either as an ointment or in the form of the official oleate. This, however, is not suitable for use when the general absorption of mercury is desired, as ointments containing over 10 per cent. of the oxide cause considerable irritation of the skin. Ammoniated mercury and mercury salicylate were absorbed almost as well as the oxide. Calomel was absorbed to a less extent than any of the other mercurials examined. Metallic mercury was absorbed rather less than the oxide, but can be used in stronger concentration without causing undue irritation of the skin. The official mercurial ointment with a lard base seems to be the best preparation for ensuring the general absorption of mercury. The inunction of 4 gm. (about 1 drachm) for two minutes gave, on an average, an absorption into the body not exceeding 0.12 gm. (about 1.84 grains) of mercury, and after ten minutes' inunction an absorption not exceeding 0.17 gm. (about 2.61 grains). The outcome of the long investigation is mainly confirmatory of existing knowledge, which is founded on the effects that have been obtained in practice. The outcome will be probably that the British Pharmacopœia revisers will leave things as they are.

Gazette

Partnership Dissolved

PRESTON, A. J., GIBBS, R. J., DALE, W., GODFREY, W. H., and GODFREY, A. E., 34 Sumner Road, Peckham, Surrey, manufacturing chemists, under the style of Preston, Corndale & Co., so far as R. J. Gibbs and A. E. Godfrey are concerned.

Pharmaceutical Society of Northern Ireland

Council Meeting

THE monthly meeting of the Council of the Pharmaceutical Society of Northern Ireland was held on August 20 at Scottish Provident Buildings, Belfast, Mr. Horatio Todd, J.P. (President), in the chair. There were also present:—Messrs. F. Storey (Vice-President), W. J. Rankin, Samuel Suffern, Arnold McBride, T. W. McMullan, M.P., Wm. S. Taylor, W. J. Hardy, H. G. Pring, O.B.E., J.P., S. S. Badger, J.P., W. E. Wilson, F. J. Smith, J.P., H. Lancashire, J.P., J. E. O'Neill, J.P., J. Moffet, Dr. V. G. L. Fielden, Dr. Acheson, J. Dundee, Andrew Wilson, and D. L. Kirkpatrick (secretary). At the outset, Mr. McBride intimated his intention to present to the Society two antique acid bottles as a nucleus of a museum. These specimens are engraved and embellished by hand. The thanks of the Council were tendered to Mr. McBride. Mr. Storey mentioned that a number of books had been left by the Pharmaceutical Conference of 1838 to the Chemists' and Druggists' Society of Ireland and the Pharmaceutical Society in Belfast. These could be had for the application, and should be kept in the Society's rooms. It was decided to apply for them.

PRESIDENTIAL BADGE

A subcommittee consisting of the President, Vice-President, Dr. Fielden, and Mr. H. G. Pring was appointed to deal with the securing of a badge and chain of office for the President. It was agreed that a photograph of the President and of each succeeding holder of the office be hung in the rooms of the Society. It was decided also that a replica of the presidential badge be presented to each President.

REGISTRATION AND RECIPROCITY

The Law Committee reported on the application from Mr. Wm. Honeyman for registration, referred from the Council, that they did not consider the time opportune to deal with the application (*C. & D.*, July 24, p. 163).

THE PRESIDENT observed, in reply to Mr. McMullan, that if they started to take in individuals there would be no necessity for reciprocity.

MR. McMULLAN: Would you think it right to open the question with the Pharmaceutical Society of Great Britain on the general point?

THE PRESIDENT: We considered it rather premature.

MR. STOREY understood an Irish chemist had applied for recognition in Great Britain.

After further discussion it was decided, on the motion of Mr. Taylor, seconded by Dr. Fielden, that the action of the Law Committee be confirmed.

USE OF SOCIETY'S SEAL

Regarding the use of a facsimile of the seal on stationery, labels, etc., Mr. Hamill advised that the seal is the property of the Society, and no one has any right whatever to use it or reproduce it, except by authority of the Society.

MR. STOREY said it had been the habit of some members of the Irish Society to have facsimiles of the seal of the Pharmaceutical Society of Ireland on their glass doors and correspondence. Personally, he did not agree with it. He believed the seal should be kept for sealing documents. He did not see why they should not have a crest if they wished to put it on. He suggested a diagram should be drawn up and submitted to the Council. On the suggestion of the President he gave notice of motion to that effect.

ERSE AND CERTIFICATES

The Law Committee recommended that an amended regulation be made to include Erse with the other languages accepted for preliminary certificates.

THE SECRETARY stated applications had come in for certificates which had included Erse as the only language. They had neither Latin nor French, and, according to their regulations, they had to turn them down.

THE PRESIDENT said a great many well-educated boys had their certificates, and instead of taking Latin they had Erse.

After further discussion, a proposal by Mr. STOREY, seconded by Mr. SUFFERN, that Erse be added to the list of optional subjects, was defeated.

SALE OF AGRICULTURAL POISONS

Mr. Hamill, Legal Adviser to the Council, advised that the following wording for certificates for pharmaceutical chemists who are already on the Register is in order:—

This is to certify that M..... is a pharmaceutical chemist on the Register of this Society.

It was resolved that the following applications for agricultural and horticultural licences be not opposed: Graham Bros., Caledon, H. Duncan, Caledon, D. Allen, Poyntzpass (amended application).

The Secretary was instructed to oppose the granting of licences to sell sheep dip to a county Antrim shopkeeper, and not to oppose the granting of a licence to another applicant in a market town where there was no chemist or druggist within reasonable distance.

MR. STOREY said he understood a number of applications for permission to sell agricultural poisons had been allowed by the Police Committee of Belfast. The instructions to their secretary were to oppose all such applications. He thought the Council should not let the action of the Police Committee and Corporation go, and that they should make a strong appeal to the Home Office on the matter. Qualified men had to pay two or three guineas for their licences per annum, but these shopkeepers had only to pay 10s. 6d. He could not understand why the Corporation of Belfast should have granted those licences in the face of the letter the Council sent. They made a report to the effect that chemists and druggists handled quite a lot of things besides poisons. That argument was totally irrelevant and beside the point. They as a Council should oppose that thing, and, if necessary, spend money in fighting it.

THE PRESIDENT said if the Ministry upheld what the Corporation had done the Council could not get beyond that, and there would be no means of spending money on it. They could not take the matter into court. The Council had taken every step they could up to the present, and should certainly go to the Home Office on the subject.

MR. TAYLOR thought the Secretary in opposing the issue of those licences to the traders in country towns should mention that sulphate of copper did not come under the regulations.

MR. SMITH advocated making as strong protest as possible to the Home Office. All over the country there would be people selling the poisons, and folk would be laughing at their Society.

It was agreed to leave the matter in the hands of the Law Committee, with Council powers to take the strongest action necessary.

MR. O'NEILL remarked that before they went to the Home Office they should ascertain how many of those licences had been granted throughout the entire of Northern Ireland. He had seen sheep dip with arsenic beside groceries in shops.

THE PRESIDENT said an inspector had told him since the new regulations came in things were much better in that respect.

NEW MEMBERS

Eleven pharmaceutical chemists were elected as members, and ten registered druggists as associates.

MR. A. W. WILSON, reverting to the question of reciprocity, suggested that negotiations should be instituted with a view to securing reciprocity with the different states in Australia and with New Zealand.

THE PRESIDENT said the matter was not being overlooked.

The Society's examinations will be held on December 6.

THE LATE MR. G. W. HAWTHORNE

On the motion of the PRESIDENT, a vote of condolence with the widow and family of the late Mr. Geo. Wm. Hawthorne was passed, the members standing. The Vice-President attended the funeral.

Natural and Synthetic Camphor

By E. W. Lewis, Ph.D.

A symposium giving the sources, production, commerce and applications of camphor in the arts and industries, together with the latest information regarding the synthetic product, which is making serious inroads into the consumption of natural camphor.

ONE of the earliest references to camphor is that of the Arabian Prince Imru-l-Kaisu in the sixth century. In the seventh century, when the palace of the King of the Sassanides was pillaged, large quantities of camphor were destroyed. The Arab merchant Sindbad, in the early part of the ninth century, mentions that camphor was obtained by making incisions in the camphor trees. Isaac Ibn Amram (Comment. Paulus Aegineta, 111, 427-429) also gives an account of camphor refining which is very similar to the modern methods of refining in vogue to-day. Camphor was used in medicine by the Arabians and Italians in the eleventh century, and by the Germans in the twelfth century.

In recent years, and particularly since the Japanese Government monopolised the Formosa production, Japan produces about 75 per cent. of the world's supply. Government ownership and monopolies such as that of camphor are carried out to a far greater extent in Eastern than in Western countries. There are several reasons for this, the principal one being the matter of revenues and the protection and development of the natural resources of the country. The production of synthetic camphor is one of the most recent and outstanding achievements of modern organic chemistry, and the application of chemical reactions in the industrial field. Although synthetic camphor is produced commercially, much the greater part of the camphor of commerce is obtained from the camphor trees of Japan and Formosa, but the former is a growing menace to the natural industry.

SOURCES OF CAMPHOR

Camphor is obtained from a species of cinnamon (*Cinnamomum Camphora*, Nees, and Eberm.), a moderate-sized evergreen tree which grows in Japan, the island of Formosa, Hainan, the Central Provinces of China, and the Malay Peninsula, the camphor being extracted by distillation with steam from the wood and leaves; occasionally masses of crystalline camphor are found in cavities underneath the bark of the tree. It is also present in the oils of spike, sassafras and rosemary. Borneo camphor is obtained from a large and stately tree (*Dryobalanops Aromatica*, Gärth), which grows in North Borneo, Sumatra and Labuan, in which the camphor appears as an exudation from the fissures, and also found as masses of crystals in the cores of the older trees which are destroyed during the process of "winning" the camphor. An average tree on distillation yields about 10 lb. of camphor. The best qualities and the most abundant quantities of camphor are obtained from Formosa, where the trees grow in forest formations, which, however, are becoming increasingly difficult of access. In all other areas the camphor tree grows in a highly scattered and isolated manner, rendering its location difficult in untraversed land, transportation being often impossible, hence necessitating local treatment and distillation conducted in a most uneconomical manner. The Formosan camphor industry formerly declined considerably, due to neglect, particularly due to lack of systematic afforestation and tree-planting methods. In the years subsequent to 1899, when Formosa was transferred from Chinese to Japanese rule, a change came over the industry, modern methods being introduced. The Chinese Government have recently recognised the desirability of camphor culture, and are now establishing afforestation methods for re-planting and prohibiting the using of trees below twenty years old. The marketing of the Chinese product is done largely through brokers at Hong Kong. The Japanese Government conduct the industry as a national monopoly, which incidentally at the outset meant a considerable rise in the price and was the means of directing attention towards the production of the synthetic

product. The Japanese Monopoly Bureau have decided to plant 4,000,000 trees per annum for twelve years, and also study and develop leaf distillation. The outstanding position of Formosa as a camphor-producing country is shown by the returns of camphor production for 1910, when Japan produced 134 tons and Formosa 2,680 tons.

A development of importance to celluloid manufacturers is reported from Burma, where a 650-acre camphor plantation has been established at Yatsauk, Southern Shan States, and is now producing on a commercial scale. It is stated that a distilling plant is in operation, and that a refining plant is being erected."

EXTENT OF THE INDUSTRY

The extent of the camphor industry varies considerably from year to year, the fluctuations being regulated by the demand and also the internal economic conditions of China and Japan. In 1916 the world's output of camphor amounted to 152,000 cwt., and in 1918 to 89,200 cwt. The total imports of camphor into the United Kingdom in recent years is as follows, which are quoted from the current issue of the Board of Trade Returns:—

Year	Weight cwt.	Value £
1920	16,752	960,919
1921	8,525	155,877
1922	14,923	276,356
1923	12,005	218,224
1924	7,439	165,711

For the year 1924 the sources of the camphor imported into the United Kingdom were as follows:—

Country	Weight cwt.	Value £
Japan	3,543	102,547
China	991	16,439
Germany	1,494	22,304
France	1	18
Straits Settlements ...	1,410	24,403

The annual report of the Department of Finance of Japan for 1926 gives the following table to show the home production of Japanese camphor and camphor oil, together with the extent of the industry:—

Year	Families engaged	Camphor produced		Total value in 1,000 yen
		Crude (kilos)	Oil of (kilos)	
1920-21 ..	3,241	1,007,206	919,938	4,464
1921-22 ..	2,859	1,231,249	1,275,797	4,792
1922-23 ..	2,396	847,768	657,425	2,563
1923-24 ..	2,282	750,983	760,208	2,431
1924-25 ..	2,398	1,601,352	1,487,711	5,088

The area of the camphor forests in Formosa alone in 1915 amounted to 1,990 square miles. The Japanese Monopoly Bureau hold an effective control over the camphor market, as they invariably hold stocks, and release quantities according to market conditions. The value of the camphor exported varies irrespective of the amount produced. The destination of the Japanese camphor exported in recent years is shown in the following table (amounts in piculs):—

	1923	1924	1925
British India	10,475	6,243	6,100
France	2,899	2,298	3,177
Germany	2,962	2,042	2,408
United Kingdom ..	2,715	2,147	3,872
U. S. A.	19,758	15,300	14,922
Australia	1,100	729	808
Other countries ..	2,929	2,875	3,113
	42,838	31,634	34,400

The camphor exports from China in recent years are as follows:—

Year	Weight (piculs)	Value (taels)
1922	11,256	1,007,355
1923	15,103	1,420,901

The principal centres of the Chinese camphor industry are Foochow, Fukien, and Kiangsi. At Foochow alone there are twelve camphor distilleries, each being capable of producing 330 lb. of camphor per day. The disturbed state of the internal political affairs of China is reflected to a very large extent in the fluctuation of the camphor produced in the country. The intense and probably highly destructive and reckless exploitation of the most remote camphor resources of Foochow under the stimulation of a world demand during the war caused a considerable trade development, which, however, has not been maintained. The camphor refining industry of India is principally conducted at Bombay, where a high-grade product is produced. In 1923 the camphor refined at Bombay reached a value of £235,000. In view of the tendency of the Japanese Monopoly Bureau to demand high prices, and also to encourage home consumption, increasing efforts are being made to develop camphor forests in the Southern states of U.S.A., and also the utilising of turpentine for the production of synthetic camphor.

DEVELOPMENT OF THE INDUSTRY

The introduction and cultivation of the camphor tree in countries other than China and Japan has been a question of considerable difficulty for a number of years. Although the tree flourishes abundantly in its native forests, its range of adaptability to climate, soil and altitude appear to be somewhat limited in order to produce camphor on a commercial scale. The tree has been found to adapt itself very slowly to sub-tropical conditions, and data is necessarily slow in accumulating, due to the trees requiring to reach an age of about fifty years before definite conclusions can be arrived at as to the quality of the camphor produced. The camphor tree is much planted in India, and grows well at Dehra Dun and the Nigris and districts of altitudes up to 6,000 feet.

Previously it had been assumed that only the roots and trunks of camphor trees between the ages of fifty and a hundred years old were capable of giving a good quality camphor. Hooper (Agric. Ledger, 1893, No. 5), however, has shown that the leaves of *Cinnamomum Camphora* also give a good-grade camphor, although the yields are erratic. Hooper found that the leaves gave a yield of 1.3 per cent. of camphor oil of specific gravity 0.9322 at 15° C., optical rotation 40°, with a solid camphor content varying from 15 to 75 per cent. In general the camphor exists dissolved in a volatile oil distributed throughout the whole tree, being more concentrated in the roots and found in lesser quantities in the wood, twigs and leaves. Recent investigations have shown that excessive tree growth is detrimental to its camphor-producing capacity, but that age and density of the trees tend to increase the camphor-producing capacity. The production of camphor in the vegetable world is the result of intricate and complex physiological processes which take place in the plant or tree, and which are but little understood, but appear to be influenced to a very marked extent by altitude and general climatic conditions. Different varieties of the tree have been found to vary considerably in the quality and the quantity of the camphor produced, the age of the tree having a maturing effect on the camphor produced, and also increasing the proportion of solid camphor in the camphor-oil mixture. The relative proportions of the camphor to the camphor oil produced in the tree has also been found to vary with the seasonal and climatic conditions prevailing during the latter period of its growth. In nature the camphor is found in association with a number of hydrocarbons from which the camphor is probably derived.

In China and Japan the camphor industry is conducted by means of Government licensed families or communities, the product being sold to the Government, who conduct a considerable proportion of the refining. It is difficult to determine the present state of the camphor industry in China, due to the unorganised state of industrial affairs in the interior. There appears to be no systematic method of replanting, a procedure which must eventually prove fatal to the industry.

EXTRACTING AND REFINING CAMPHOR

The native method of extracting the camphor is as follows:—When a suitable tree has been selected, a crude native still is set up on the spot, which consists of an improvised boiler with an iron base and a wooden top, connected to a distilling vat partially filled with water. The tree is cut up, placed in the still with some water, and the whole is heated up, the camphor will appear as crystals on the walls of the condenser, whilst the camphor oil will float on the surface of the water in the condenser. The cultivating of the camphor tree in nature is by far the most difficult operation, the extraction of the camphor from the tree being a comparatively simple matter, although the high quality material can only be obtained by efficient and well-organised methods. In Formosa, wooden presses are largely used for pressing out the camphor oil, the presses being operated by native labour, the best quality being finally produced by the final subliming of this product. Crude camphor is grey in colour, the impurities being principally iron, sand, water, wood and camphor oil. Within recent years camphor oil has been extracted in Japan, its value being due to its safrol content. The modern method of camphor refining is by first eliminating the water and oil, either by centrifugal methods, crystallising from benzene, pressing in hydraulic presses, vacuum processes, or by means of air currents in the presence of dehydrating agents, such as calcium chloride or phosphorus pentoxide. For the final subliming operation the pressed or crystallised product is intimately mixed with lime and charcoal, and the mixture heated until sublimation is complete, the camphor being collected on glass surfaces. The refined camphor of commerce is marketed in three forms, "block" camphor, which consists of translucent slabs; "bell" camphor, which is in a granulated state, and "flowers of camphor," which is in a finely divided state.

OIL OF CAMPHOR

The two substances known by this name are the oleo resin of Borneo, a by-product of the distillation of *Dryobalanops Camphora*, and the oil obtained after extracting the solid camphor from the Formosa product. Formerly the latter product was considered worthless and was discarded; it is now further treated by fractionation and refrigeration, for the extraction of the last traces of camphor and of safrol, and the residue is used as an ingredient of varnishes, lacquers, Indian ink, and as an illuminant. In Europe the camphor oil is used to a large extent as the source for the production of safrol, artificial sassafras, and heliotropine, the residual oil being utilised as a turpentine substitute; for some substances it possesses superior solvent properties to that of turpentine, particularly for resins and caoutchouc. Commercially there are two types of camphor oil, viz., the white and black varieties. The former consists mainly of the terpenes and cineol, the black camphor oil has a somewhat higher boiling point and density, and consists mainly of safrol, eugenol, and the sesqui-terpenes. Camphor oil consists of a complex mixture of hydrocarbons, ketones, alcohols and phenol ethers, the principal chemical compounds being: acetaldehyde, camphor, terpineol, safrol, eugenol, cineol, pinene, phellandrene, dipentene, and cadinene. Camphor oils vary in density from 0.89 to 0.97, and the boiling points from 115° C. to 270° C. The camphor oils are dextro-rotary, varying from +12° to +32°.

PROPERTIES AND USES OF CAMPHOR

Camphor is a volatile oxygenated hydrocarbon of a granular crystalline structure, is colourless and transparent, and readily sublimates. It has a peculiar characteristic odour, and easily soluble in organic solvents, from which it crystallises in hexagonal crystals. Natural camphor is optically active and dextro-rotary, synthetic camphor of commerce is inactive, although an optically active variety has been prepared. Natural camphor has the following physical constants:—

Density at 18° C. ...	0.936 to 0.996
Melting point ...	179° C.
Boiling point ...	204° C. at 757 mms.
Optical activity (α) _D ...	41.4°
Solubility in water ...	1 in 700

On the reduction of camphor, the alcohol borneol is produced. From a study of the products formed on the oxidation of camphor by means of nitric acid have been deduced the present conceptions of the constitutional formula of camphor. Camphor interacts with phosphorus pentoxide producing para-cymene, and with iodine forming carvacrol. Many formulae have been suggested for camphor during the past few years.

The manufacture and the production of celluloid articles, of which camphor is an important ingredient, marked the first extensive use of industrial camphor, this industry now consuming over 80 per cent. of the world's production. The development of the cinematograph industry has also created an increased demand for camphor for the manufacture of films. Amongst other industries in which it is used are for the production of artificial leather, pyrotechnics and explosives. In medicine it is applied externally as a rubefacient and disinfectant, and internally as a carminative and intestinal disinfectant. Camphor is used as a cardiac and antispasmodic in diseases of the typhoid type, and in functional nervous disorders, *e.g.*, hysteria and colic. It is an anodyne, and in quantity is an irritant with benumbing influence on the peripheral nerves of the mucous membrane; it is also used to inhibit the growth of spores. Amongst other applications are in tooth powders, in the manufacture of insecticides, varnishes, lacquers, and in the curing of leather and furs.

SYNTHETIC CAMPHOR

Synthetic camphor as a commercial product has attracted considerable attention of late years, the United States and Germany now being engaged in the industry. The obstacle to the systematic manufacture of synthetic camphor is the use of the monopoly held by the Japanese Government to bring down prices when competition renders such a course desirable from the standpoint of the producers of natural camphor. Synthetic camphor, apart from its optical inactivity, resembles in properties those of natural camphor, and compares as an achievement with the production of synthetic alizarin and indigo, which are now established industries, the product competing in price with the natural variety. Physiologically, natural and synthetic camphor are identical, Darmon ("Compt. Rend.," 1910, p. 925) has produced synthetic camphor of optical activity equivalent to the natural product. Natural camphor may be distinguished from the synthetic variety by a method due to Bohrisch ("Pharm. Zeit.," 1914, vol. 55, p. 1,003), 0.1 grams of the powdered camphor is treated with ten drops of a cold mixture of equal parts of vanillin hydrochloride and concentrated sulphuric acid; with natural camphor the mixture becomes rose coloured after 30 minutes, pure green after two hours and deep indigo blue after five hours, the blue colour persisting even after 24 hours. Synthetic camphor similarly treated gives a yellow colouration at first, finally becoming colourless and turbid. The production of a synthetic substitute for camphor is a phase of the camphor industry which has not been lost sight of, and a valuable account of the progress in this direction to date has been given by Sachs (J.I.E.C., 1921, p. 893).

The initial attempts at the production of synthetic camphor commenced in 1905, being based on pinene, a constituent of turpentine. Early attempts were fostered and encouraged by the excessively high prices of natural camphor which ruled at that time. During the war, synthetic camphor was produced to a very large extent in Germany, and entirely replaced the natural variety for technical use in that country during the war period. The American Camphor Corporation also state that they could economically replace with the synthetic product the supplies of natural camphor. In 1907 synthetic camphor was sold in London at 290s. per cwt., and in September, 1921, at 280s. per cwt., compared with 399s. per cwt. for natural camphor. The large number of methods and processes applied in the production of synthetic camphor are invariably based on chemical reactions, which have been known for many years, and only differ in details of application. They are essentially based on the conversion of pinene into isoborneol or camphene, or the action of organic acids on pinene; it is also prepared by the dry distillation of the calcium or lead salt of homocamphoric acid. Details of these processes are given in

THE CHEMIST AND DRUGGIST on several occasions. The most important industrial process for the production of synthetic camphor is that of Darasse (French Patent, No. 509,680), plants operating this process being worked by the Societe Alsacienne de Produits Chimiques at La Rochelle, and also in Germany and the United States. Essentially the process consists of the condensation of the pinene into isoborneol ester by means of tetra-chlorophthalic acid, and subsequently oxidising.

The direct effect of the Japanese monopoly of the sources of natural camphor has been to encourage the cultivation of the camphor tree in other countries, and to stimulate the study of the economic manufacture of synthetic camphor from turpentine. In the words of Prof. Paterno, in a recent lecture on "Synthetic Camphor," "man seeks to approach ever nearer to Nature in his work; while his successes are obtained piecemeal and painfully in the laboratory by indirect and tortuous paths, Nature proceeded with a simplicity as great as it appeared to us amazing and mysterious."

In order to combat the Japanese monopoly of the natural camphor resources, large U.S.A. chemical manufacturing companies have commenced the manufacture of camphor from turpentine. This step is the outcome of difficulties having arisen between the respective governments regarding the question of prices and the inadequacy of the U.S.A. camphor allotments by the Japanese Camphor Monopoly Bureau, with regard to the present position of the celluloid industry in U.S.A. As the United States of America produce turpentine far in excess of its own needs, it is anticipated that the synthetic camphor industry in U.S.A. will develop in huge dimensions. The industry is being fostered by an import tariff on natural and synthetic camphor, and will eventually compete economically in price with the natural product, counteract the Japanese monopoly, improve market conditions, and bring a new source of supply to the ever increasing demand. The world's camphor requirements for manufacturing purposes are now estimated at 6,000 tons per annum.

Economically, the production of synthetic camphor is an extremely difficult problem, and is primarily dependent on a plentiful supply of turpentine rich in pinene. This limits the countries for its successful production to a few. During the war, owing to the failure of outside supplies the Schering interests in Germany manufactured synthetic camphor from a turpentine base, the product meeting all the commercial and pharmaceutical requirements.

Dr. G. Blanc, the U.S.A. Consul at Hamburg, expresses the following views regarding camphor in a recent report on the subject to the U.S.A. Government: "Below a certain price synthetic camphor cannot compete with the natural camphor, and the purpose of the Japanese monopoly evidently is to maintain prices sufficiently to compel German factories to suspend manufacture, and even to disappear, since it is impossible to tie up a costly plant indefinitely. It is difficult to see how long this state of affairs can continue. Many events may modify it. In the first place there arises the increasing difficulty for the Japanese to produce camphor. For its extraction extremely old trees are cut down, which naturally are not replaced. Plantations are made and replanting schemes are favoured, but these young trees become productive only in about 30 years. The immense forests of Formosa are not yet nearly exhausted, certainly, but everything on the coast has been cut, and the interior is penetrated with much difficulty, so that exploitation has become extremely perilous. The moment will arrive, therefore, when the old trees, having disappeared, or become difficult to reach, there will only be available the young trees, which will be rapidly destroyed. The moment will come when increasing prices of the natural camphor will make the synthetic product camphor manufacturing industry profitable." Recently the Japanese Monopoly Bureau reduced the price of crude camphor by 25 per cent., owing to the fact that serious inroads have been made in the trade by synthetic camphor in the United States.

OUR AMATEURS.—Photographic customer (to busy chemist who has spent twenty minutes explaining the development of plates): "Ah, and then you wash it; well, what is the best soap to use?"

Trade Report

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbiling, packing, etc. Qualities of chemicals, drugs, essential and fixed oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities.

42 Cannon Street, E.C.4, August 26.

THERE is evidence of a slightly better tone in the drug and chemical markets, and should there be a complete resumption of work in the coal-mining industry a much better autumn trade is looked for. As regards Mincing Lane, depression continues, with speculation almost at a standstill. Among crude drugs, new cascara sagrada to arrive is easier, with spot prices steady; senega is easier. Opium is firm and unchanged; ergot is attracting interest, but the future outlook is obscure. Menthol is easy. Seeds remain dull, with dill scarce and dearer; Dutch caraway is firm. Among the essential oils, while the demand is moderate, interest is maintained in new crops, particularly French lavender, which is firmly maintained, and American peppermint, which is tending easier. Higher prices are quoted for Sicilian oils, but Spanish oils have reached a lower level than for some time past. In pharmaceutical chemicals, a number of products show a weakening tendency. These include chloral hydrate, guaiacol carbonate hydroquinone, resorcin, salol, barbitone, sola diethylbarbiturate. Among industrial chemicals there is rather more inquiry for shipment, but home trade continues quiet. Acetone is still unsettled and nominal. Cream of tartar is offered at lower prices. Lead products are slightly easier. Potash chlorate is steadier and soda chlorate is cheaper. Coal-tar products, in the absence of adequate supplies, are mostly nominal. Methyl alcohol is weaker inclined. Among fixed oils the general tone is unsteady and on continued poor business a number of products are lower. These include castor and cottonseed, palm, palm kernel, and soya are dull and easy. Linseed and turpentine are lower. Olive oil is dearer.

Higher	Firmer	Easier	Lower
Bergamot oil Betanaphthol Dill seed Lemon oil Olive oil Pitch	Acid oils Orange oil Rosemary oil Damiana (Sp.) Damiana (c.i.f.)	Albumen Amidopyrin Barbitone Cajuput oil Chloral hydrate Clove oil Lead products Palm oil Resorcin Sodium chlorate Spike oil (Sp.) Tartar emetic (tech.)	Cantharides (Ch. c.i.f.) Castor oil Cotton oil Hydroquinone Linseed oil Pennyroyal oil Peppermint oil (Amer. and Jap.) Pepper Salol Senega (spot) Thyme oil (Sp.) Turpentine Soda diethylbarb.
	Steadier.		
	Potash chlorate		

Cablegram

NEW YORK, August 25.—Business is fair. Menthol has advanced to \$5.00 per lb., and hydrastis (golden seal) to \$4.90. Senega is higher at 70c., and balsam Peru has advanced to \$1.75. Formaldehyde is dearer at 10½c. Peppermint oil in tins has declined to \$10.00 per lb., and Cartagena ipecacuanha to \$4.25. Mexican sarsaparilla is cheaper at 40c., and balsam Canada has been reduced to \$11.00 per U.S. gallon. Oregon balsam of fir is also cheaper at 90c. per U.S. gallon, and short buchu has been reduced to 45c. per lb.

Crude Drugs, etc.

ALBUMEN.—Prime Chinese egg is slightly easier, spot offering at 2s. 11d. to 3s. per lb., and August-September shipment at 2s. 11d., c.i.f.

ANTIMONY.—The difficulties in China would seem to be getting still more acute having regard to shipments, and all sorts of figures are being asked for regulus, upward of £66 10s. c.i.f., and forward business is thus very difficult; although there are sellers of spot parcels and metal near

at hand on this side at £65, and even a little less. It was reported that the output in China has been very severely curtailed by the floods. English regulus is £74 10s. to £75, Chinese crude spot is nominally £50, and shipment £45 per ton c.i.f.

ARECA.—Spot sellers quote sound Ceylon at 55s. per cwt.

BALSAMS.—Current spot quotations are: *Tolu*, 3s. 6d. to 3s. 9d.; *Peru*, 6s. 6d. to 6s. 9d.; *Copaiba*, 1s. 8d. to 1s. 9d.; *Canada*, 5s. 3d.

BELLADONNA ROOT is somewhat scarce on spot, and offered at 55s. per cwt. upwards.

CADMIUM is steady, with a fair business for Australian at 1s. 9d. per lb., and American is quoted 1s. 10½d.

CALUMBA.—Spot prices of very fair sorts range from 15s. to 16s. per cwt., according to quantity.

CANELA ALBA is offered at 1s. 2d. per lb. on the spot.

CANTHARIDES.—Lower quotations are made for Chinese at 1s. 11d. per lb. c.i.f. to arrive. The nominal spot value is 3s.

CARAWAY SEED.—New crop Dutch for prompt or August-September shipment is quoted at 39s. per cwt. c.i.f.

CASCARA SAGRADA is quiet, with spot sellers of 1924 at 75s. per cwt., and 1925 at 72s. 6d. Sales have been made at about these prices. To arrive, 1926 bark is irregular, and quoted at about 65s. up to 70s. c.i.f., and 1924 at 70s. c.i.f. The "Maine," from Seattle, has brought 396 bags to London, and the "Pacific Trader" 273 bags from Puget Sound.

CHAMOMILES.—Although reports regarding the Belgian crop indicate that it will be smaller than usual, buyers continue to hold off and trading is very small. There is still a fair amount of 1925 crop in the hands of dealers, which is offered at very reasonable prices. New crop of first pickings offer at 150s.

CLOVES.—Zanzibar continue dull of sale at from 9½d. to 9½d. per lb. on the spot, according to quality, and for September-November shipment 8½d. per lb. c.i.f. is quoted. The landings in London during the week ended August 21 were nil, and the deliveries 168, leaving a stock of 11,458 bales, against 10,434 bales in 1925 and 23,945 bales in 1924. Up to August 21 the landings of Zanzibar in London have been 9,759, against 9,467 in 1925, while the deliveries amount to 12,501, against 14,137 last year.

COD-LIVER OIL.—Our Bergen correspondent writes, on August 23, that the market continues quiet with limited sales at the unaltered price of 105s. to 107s. per barrel, c.i.f. London, for non-freezing steam-refined quality.

CORN PRODUCTS, ETC.—Guaranteed water-white *glucose* (corn syrup) is 21s. 9d. per cwt. for August-October delivery, ex store, London. Dutch *maize starch powder* (corn flour) is 14s. 6d. per cwt. on the spot. American, for August-October delivery, is 14s. 6d. per cwt. net, ex store, London. Pearl starch is 14s., ex store, London. Dutch *maize starch crystals* is 22s. 6d. on the spot, and American for August-October delivery is 19s. per cwt., ex store, London. Dutch *dextrin* is 24s. per cwt. American canary for August-October delivery is 18s. 3d., and white, for August-October, 18s. per cwt., ex store, London. Dutch farina is 14s. 9d. per cwt. on the spot and 13s. 9d. f.o.t. for shipment.

DAMIANA LEAVES are firmer at from 10½d. to 11d. per lb. c.i.f. for prompt shipment from New York, and for large quantities from primary sources 10d. c.i.f. is quoted.

ERGOT.—There is more inquiry, or at least more interest is shown, and offers are being invited. Russian, which was quoted at 2s. 6d. c.i.f. recently, has advanced, and although there are buyers at 2s. 7d. to 2s. 9d., more would probably have to be paid, probably 3s. c.i.f., if parcels can be had. For some time past it has been said that Spain has been buying Russian on the Hamburg market for mixing purposes, and in order to eke out supplies. Spain quotes 3s. 9d. to 4s., but lower prices are anticipated in some quarters with the autumn.

EUONYMUS BARK is offered at 2s. 8d. per lb. c.i.f.

FUSEL OIL is steady at from £72 10s. to £73 per ton c.i.f. for 90 per cent. in drums.

HYDRASTIS is steady at from 21s. 6d. to 22s. per lb. c.i.f.

LOBELIA is in fair demand at 1s. 7d. per lb. spot or c.i.f.

MENTHOL is neglected, spot sellers quoting Kobayashi-Suzuki at 18s. 6d. per lb.

MERCURY has been slow but steady at £15 7s. 6d. to £15 10s. per bottle, demand being restricted, but offers are not being pressed and there is no indication of any change in the outlook, which continues obscure pending more reliable news as to possible developments at the Spanish mines. The home imports for July amounted to 1,792 bottles, which makes an aggregate for the year, so far, of 9,056 bottles, compared with 12,670 bottles for the corresponding period of last year.

NUX VOMICA.—Cochin is quoted at 16s. per cwt. c.i.f.

OLIVE OIL is dearer on account of damage by the olive fly and drought in Spain. French B.P. oils are quoted at 6s. 3d. to 6s. 6d. per gallon, edible 7s. 6d. to 8s. Italian edible, 8s. to 8s. 6d., and Spanish edible, 7s. 6d. to 7s. 9d. per gallon.

OPIUM.—London prices are unchanged, Turkey druggists offering from parcels just arrived at 2s. 2d. per unit. The arrivals of opium in London include £9,499 from Turkey, £7,600 from British India.

CONSTANTINOPLE, August 15.—“During the period July 31 to date arrivals were as follows:—Druggists', 927; 'softs', 24; Malatia, 119 cases. Stocks amounted to: Druggists', 670; 'softs', 41; Malatia, 189 cases. The inclusion of opium among the quotations on the cereal exchange has considerably modified the position. Already at the opening of the exchange many hastened to have their names inscribed on the list, with the result that the 60 cases offered for sale were made the object of brisk transactions. This speculative movement had its natural effect, since prices rose from £T24 to £T28 per oke. Some exporters were involved in this increase and were compelled to buy at the higher figure in order to cover contracts. The same has occurred in Smyrna, and in consequence the market in general is much firmer. Some exporters unable to sell at parity in Europe were compelled to throw on the market some dozens of cases to allay the excitement. This step had an excellent effect, and at present it is possible to buy at a considerably lower figure. Sales for export amounted to 168 cases druggists'.”

RUBBER is again better by ¼d. per lb. The tendency for the past week has been very firm, and although there has been very little business doing, sellers are not inclined to meet the market at all freely. Reports from America regarding stocks and arrivals continue “bearish,” but on the other hand the sale of manufactured goods has improved considerably. Singapore cables report a steady market, and in spite of the quiet tone we find very few offers from that quarter. Stocks last week were further increased by 365 tons, and the London stock now stands at 29,678 tons. Quotations: Wednesday, 5 p.m., No. 1 standard ribbed smoked sheet, spot and August, 1s. 7½d.; September, 1s. 7½d.; October-December, 1s. 8½d. per lb.

SARSAPARILLA.—Grey Jamaica is quoted at 1s. 6d. to 1s. 7d., native Jamaica at 1s. 5d. to 1s. 7d., and Mexican at 1s. per lb. Lima-Jamaica is unobtainable.

SEEDS.—No alteration has taken place in the seed market, which remains dull and prices unchanged. **CANARY SEED**.—There is no demand. Mazagan has sellers at 21s. per cwt. on the spot, Saffi 20s. 6d., good bold Spanish 32s. 6d., and small 24s. 6d., ex wharf, London. **CUMIN SEED**.—Maltese is 30s. for old crop on the spot, and Morocco on the spot is 32s. 6d. to 35s. **ANISE**.—Spanish is 50s., and Russian 42s. 6d. **CORIANDER SEED**.—Morocco is 14s. 6d. on the spot, and 12s. 9d. per cwt. c.i.f. is quoted for new crop. **DILL SEED** is scarce on the spot at 22s. per cwt. and 18s. 6d. is quoted c.i.f. **FENUGREEK SEED**.—Morocco is 11s. to 12s. on the spot. **HEMPSEED**.—Manchurian is 15s. per cwt. **LINSEED**.—Mazagan, 20s. on the spot. **MUSTARD SEED**.—English is steady at 54s. 6d. per cwt. on the spot.

SENEGA is quiet and easier owing to lack of inquiry, with spot sellers at 3s. per lb. to 3s. 1d., and to arrive 3s. c.i.f. is quoted.

TONKA BEANS meet a slow sale, with good frosted Angostura of first quality offering at 5s. 6d. Paras have a downward tendency, but owing to the small quantities on the spot, it is felt that the decline has been arrested, and the price of frosted is likely to remain at about 2s. per lb. for some time.

VALERIAN.—Belgian can be had on the spot at 160s. per cwt. New crop will not be available until November.

VANILLA.—Bourbon firsts of average length (6 to 7 in.) are quoted on the spot at from 14s. to 15s. per lb. Demand remains slow.

WAX, BEES', is very quiet, and owing to larger supplies and cheaper offers from importers, prices are easier. East African is 175s. to 180s. spot and 170s. per cwt. c.i.f.

WAX (VEGETABLE).—*Carnauba* is steady, but very quiet. Fatty grey is 170s. spot, and chalky grey, spot, 173s.; yellow is not available, and is nominal at 245s.; fatty for July-August shipment is 168s.; August-September, 162s. 6d.; October-December, 154s.; chalky for October-December, 153s. c.i.f. No old crop yellow is available; new crop Primavera for October-December shipment has been sold at 220s.; and Mediana for October-December shipment is 205s. c.i.f. *Japanese* vegetable is quoted at 92s. 6d. to 95s. per cwt. on the spot, and c.i.f. prices are irregular at from 84s. to 87s. per cwt.

Essential Oils

WHILE the demand continues moderate there is a fair amount of interest shown in new crops. American peppermint appears to be declining, and reports of the progress of the crop are unusually scanty. French lavender has again opened strongly this year. Spanish oils are offered at comparatively low values which, it is anticipated, will quickly improve following any sustained demand. Sicilian oils are dearer. Australian eucalyptus has been selling at higher rates.

ANISE (STAR).—“Red Ship” on the spot is steady at from 2s. 10½d. to 3s. per lb. for cases; drums are 2s. 6d. net. In some directions higher c.i.f. quotations have been made, but 2s. 5½d. c.i.f. is still current.

BERGAMOT.—An advance is reported at the source, up to 24s. 9d. per lb. c.i.f. being quoted for 37 to 38 l.a. On the spot there are sellers at 24s., or slightly less.

CAJUPUT on the spot is slow of sale and cheaper at 2s. 5d. to 2s. 6d. per lb.

CARAWAY.—Spot holders have been making small sales from present stocks during the week at from 7s. 3d. to 7s. 6d. per lb. for Dutch, double-rectified.

CASSIA.—It is at present difficult to obtain any offers from the source, and although sellers are anxious to bid 6s. 6½d. per lb. c.i.f. there are no indications that this would be accepted. There are spot sellers of 80 to 85 c.a. at from 7s. 10½d. to 8s.

CITRONELLA.—Ceylon is unchanged on the spot at 1s. 7d., and to arrive 1s. 6½d. c.i.f. Java is steady at 2s. 4d. on the spot and 2s. 3d. c.i.f.

CLOVE.—English distilled is cheaper on the spot at from 5s. 9d. to 6s. per lb. for B.P., and from 6s. to 6s. 3d. for 90-92 per cent. eugenol.

DILL.—Sales of B.P. are reported at 9s. 6d. per lb.

EUCALYPTUS has been in fair demand on the spot, with sales reported at 1s. 8½d. per lb. for 70 to 75 cineol. Probably 1s. 9d. would now have to be paid.

GERANIUM.—Algerian on the spot is unchanged at 11s. 6d. per lb., and 11s. landed for shipment to arrive. Bourbon is obtainable at from 12s. 6d. to 13s.

LAVENDER.—There are no further developments in regard to new crop, but it is reported that the Grasse houses have made purchases at the still at 330 fr. per kilo (= 17s. 6d. per lb. approximately). If confirmed, this would tend to corroborate the previous reports of a short crop. On the spot, from 18s. to 20s. is quoted for 38 to 40 per cent.

LEMON.—A further advance has taken place, spot holders asking 8s. 6d. to 9s. per lb. in sympathy with higher prices in Messina, from 8s. 9d. to 9s. 4d. c.i.f. being quoted. But as this advance has come so late in the season, it is unlikely that any important business will be done. Stocks in the hands of dealers are small, and there is no inclination to sell.

LEMONGRASS is quoted at 3s. 6½d. per lb. on the spot and at 3s. 5½d. c.i.f.

LIME.—West Indian distilled is slow and scarce at 25s. to 25s. per lb. Hand-pressed is 35s.

ORANGE.—Sicilian is dearer at 8s. 3d. to 8s. 9d. per lb. c.i.f. for sweet or bitter. Spot is quoted at this level. West Indian sweet is freely offered at 8s. Californian in cases, 7s.

PENNYROYAL.—A sharp decline is noted in Spanish following a good yield in the recent crop, and spot sellers are quoting at from 5s. 3d. to 5s. 6d. per lb., which would be shaded for quantity.

PEPPERMINT.—There is little spot demand for Japanese dementholised, the nominal value being 10s. 6d. per lb. for Kobayashi-Suzuki, but if any parcels were pressed for sale, lower prices would probably have to be taken. Forward prices in the interests of speculators have been marked

down, and at the moment indifference is shown to the market trend by actual consumers. The key to the position is the July-August shipment, which it was thought would be maintained and even advanced, but it declined to 10s. 9d. owing to "bear" pressure, with possible buyers at 10s. per lb. On the other hand, there has been a small demand for "afloat," with sales at 10s. 6d. c.i.f. There has also been a fair demand in London for the Continent, July-September shipment is quoted at 10s. 6d. c.i.f.; September-October could probably be done at 9s. 6d. c.i.f.; October-December, firm at 8s. 9d. c.i.f.; January-March, 7s. 9d. c.i.f. Considerable interest is maintained in the prospects of the new crop American natural tin oil, but there appears to be little disposition on the part of consumers to buy. The feeling that cheaper prices are probable is encouraged by still lower quotations for good brand oil. In addition there are reports that the prospective yield of oil will be at least double that of last year. During the week offers have been made on the basis of \$9.00 per lb. c.i.f. (= about 37s. 6d. per lb. approximately) for August-September shipment. Actual spot transactions are limited to hand-to-mouth orders, and quotations are made at around 52s. 6d.

ROSEMARY.—Spanish is a shade firmer at 2s. per lb. on the spot for fine quality.

ROSEWOOD (BOIS DE ROSE) is quiet on the spot at 10s. 6d. per lb.

SASSAFRAS.—American natural is quiet at from 4s. to 4s. 3d. per lb.

SPIKE.—Values of Spanish oil have been slightly easier, spot offers being made at from 3s. 8d. to 3s. 9d. per lb., or less for quantity. Actual production, this crop, has been much reduced, and although there was a considerable carry-over from last year, importers anticipate that with any reasonable demand prices will advance in the autumn.

THYME.—According to reports from Spain, very little thymol-containing oil has been distilled. The yield of carvacrol oil has been abundant, however, and prices are now at a lower level than for some time past. On the spot, commercial quality, 28-30 per cent. phenols, is cheaper at 3s. 6d. per lb., and less for quantity.

WORMSEED (CHENOPodium).—Spot sales of American have been reported at 21s. 6d. per lb.

The following arrivals have taken place from the countries indicated during the period August 18 to 25 (inclusive):—Bay (B.W.I.), 1 cs.; oassia (Fr.), 4 cs.; citronella (Jv.) 8 dm.; (Fr.) 1 dm.; (B.W.I.) 4 dm.; (Cey.) 5 dm.; (Guat.) 3 dm.; copaiba (U.S.), 6 cs.; eucalyptus (Aust.), 26 dm.; geranium (Fr.), 2 ck.; 12 dm.; (Kenya) 3 dm.; lavender (Fr.), 1 cs.; lomon (It.), 72 cs.; 12 x ½ cs.; lime (B.W.I.), 7 cs.; orange (It.), 27 cs.; pennyroyal (Sp.), 2 dm.; peppermint (Jp.), 25 cs.; rose (Bulg.), 2 cs.; rosemary (Sp.), 3 dm.; sandalwood (Germ.), 4 cs.; sassafras (U.S.), 3 cs.; spearmint (U.S.), 1 cs.; wormseed (U.S.), 2 cs.; ylang-ylang (Fr.), 1 cs.

Pharmaceutical Chemicals, etc.

THERE is no material change to record. Those products which are likely to be exempted from Key Industry duty at a fairly early date show signs of weakening in spot value. Business remains generally quiet.

ACETANILIDE shows no change at 1s. 6d. to 1s. 6½d. per lb. for B.P. crystals and powder; business quiet.

AMIDOL is quoted at 9s. per lb.

AMIDOPYRIN continues to be quoted at about 11s. 6d. per lb., with very little business being done.

ASPIRIN meets with the usual demand in small lots, with prices steady at 2s. 4d. to 2s. 4½d. per lb., according to quantity.

BARBITONE is easier at 8s. 10d. to 9s. 1d. per lb., according to quantity.

BENZOIC ACID (B.P.) is unchanged, with the market steady: British, 2s. 1½d. to 2s. 3d. per lb., ex works, according to quantity; Continental, practically free from chlorine, 3s. 6d. per lb., spot.

BENZONAPHTHOL remains quiet and steady at about 3s. 3d. per lb. for five-kilo lots.

BROMIDES are unchanged, and business remains quiet: ammonium, 2s. 1d. to 2s. 2d. per lb.; potassium, B.P. crystals and granular, 1s. 8d. to 1s. 8½d.; sodium, B.P., 1s. 10d. to 1s. 11d. per lb.

CALCIUM LACTATE is steady, with a limited business passing: quoted at 1s. 3d. to 1s. 4d. per lb., according to quantity.

CHLORAL HYDRATE is easier, duty paid crystals in jars offering at 3s. 3d. per lb. in one-cwt. lots.

CITRIC ACID (B.P. crystals).—Business has not been at all good: dealers' quoted prices are unchanged at 1s. 3½d. to 1s. 3¾d. per lb., less 5 per cent. for foreign.

CREOSOTE.—B.P. continues quiet at 1s. 10d. per lb., in demijohns.

CREOSOTE CARBONATE remains very quiet at about 6s. 3d. per lb.

GUAIACOL CARBONATE is unsteady, with a tendency to weaken a little: 7s. to 7s. 3d. per lb. is quoted.

HELIOTROPINE meets with a fair amount of interest at from 4s. 9d. to 5s. per lb.

HEXAMINE.—Market continues steady with a fair amount of small business about: quoted from 2s. 4d. to 2s. 5½d. per lb., according to quality.

HYDROQUINONE is still quiet, and somewhat easier, offering at 3s. 11d. per lb. up to 4s. 3d. as to quality.

LACTIC ACID (B.P.) shows no change at from 2s. 3d. per lb., for quantities in demijohns: technical, 50 per cent. by weight, £41 per ton, net.

METHYL SALICYLATE seems steady as quoted at about 1s. 4d. to 1s. 4½d. per lb., for quantities in carboys; business slow and competition keen.

METHYL SULPHONAL remains dull and easy at about 15s. 3d. per lb.

METOL of British make is quoted at 11s. per lb.

MILK SUGAR.—Dealers' prices unchanged: German (B.P.), 61s. to 63s.; finest Dutch, B.P., 62s. to 64s. per cwt., according to quantity.

PARAFORMALDEHYDE (100 per cent. powder) is steady at 1s. 9d. per lb.

FARALDEHYDE shows no change at from 1s. 2d. to 1s. 4d. per lb., according to quantity and packing.

PHENACETIN continues to be quoted at about 3s. 9d. to 3s. 10d. per lb., with business quiet.

PHENAZONE is steadier, although dull, at about 5s. 9d. to 5s. 10d. per lb.

PHENOLPHTHALEIN remains quiet at from 3s. 10d. to 4s. per lb.

POTASSIUM PERMANGANATE (B.P.).—The tone continues unsteady, with business quiet: spot, in two-cwt. drums, 6½d.; in one-cwt. drums, 6½d. per lb., in quantities.

POTASSIUM SULPHOGUAIACOLATE is idle at about 5s. 3d. per lb.

PYROGALLIC ACID.—Crystals offer at 7s. 3d. per lb., and resublimed at 8s. 3d. for British make.

RESORCIN, according to quotations being made, is still very irregular: offers from 4s. 3d. to 4s. 9d. per lb.; market quiet.

SALICYLIC ACID (B.P.) is unchanged at 1s. 3d. to 1s. 3½d. per lb., according to quantity; business limited.

SALOL is lower at from 3s. to 3s. 3d. per lb.

SODIUM BENZOATE (B.P.).—A fair business has been done for forward positions, with the price for quantities rather under the quoted rate of 1s. 8d. per lb.

SODIUM DIETHYLBARBITURATE is lower at 9s. per lb.

SODIUM SALICYLATE (B.P.).—Dealers' prices are unchanged; business slow: crystals, from 1s. 9d.; powder, about 1s. 9d. per lb.

SULPHONAL remains dull at about 10s. 3d. per lb.

TANNIC ACID.—B.P. levis is steady at last week's price of 2s. 9d. per lb., in one-cwt. lots, in kegs; small parcels, 2s. 11d. per lb.

TARTAR EMETIC is easier after last week's slight advance, with dealers offering technical 43 to 44 per cent. at 11½d. per lb. to arrive; B.P., 2s. 9d. to 2s. 11d. per lb.

TARTARIC ACID (B.P. crystals).—There is no great volume of business, but prices continue steady at 11½d. to 11¾d. per lb. for foreign, less 5 per cent. for spot and forward.

TERPIN HYDRATE is lifeless at about 1s. 6d. per lb.

THYMOL shows no further decline with the quotation at about 11s. 6d. per lb. Dealers are finding it difficult to compete at this figure.

VANILLIN.—List prices are mostly at about 20s. 6d. to 21s. per lb., but business of any importance would be generally well under these rates.

Industrial Chemicals, etc.

London, August 25.

BUSINESS in heavy chemicals for home requirements remains quiet, but there is rather more inquiry for shipment. The market continues fairly steady, with no change of importance to record.

ACETIC ACID is unchanged, and competition is very keen for the limited business. 80 per cent. technical, £37; 80 per cent. pure, £38 per ton, in barrels; glacial, pharmaceutical, 99/100 per cent., £65 10s., in glass demijohns; glacial, in barrels, £55 per ton, ex wharf.

ACETONE.—Business has been very poor and is not likely to improve until steadiness has been reached as regards prices. At present business is a matter of negotiation. B.G.S. in drums, nominal at £72 per ton.

ALUM is offered on spot at about £8 10s. per ton for lump in casks, but business is still poor. Cheaper prices for quantities to arrive.

AMMONIA.—Anhydrous is steady at about 1s. 1½d. per lb., in loaned cylinders.

AMMONIUM CHLORIDE, which was reported easier last week, remains in very poor demand, and dealers' prices of about £21 10s. per ton, in casks, might be shaded for good business.

ARSENIC.—This market is fairly steady, with Cornish white powdered quoted at about £13 5s. per ton, f.o.r. mines. Business is limited to home needs.

BARIUM CHLORIDE has again been slack, and is unsteady at about £9 15s. per ton for 98/100 per cent. prime white crystals, in casks. Cheaper prices for quantities to arrive.

BARYTES is steady, and there has been a fair inquiry: dealers quote from £3 7s. 6d. to £5 15s. per ton, according to quantity and quality, c.i.f.

COPPER SULPHATE is quite steady despite the continued small demand for export. There is, however, a prospect of a good revival within the near future. Makers comprised in the Association are quoting about £23 15s. to £24 5s. per ton for casks f.o.b., less 5 per cent., but orders can be placed down to £23 10s. with other makers. Exports in July were 1,530 tons, against 1,699 tons in July last year, and the total for the seven months amounts to 33,340 tons, against 35,654 tons in 1925.

CREAM OF TARTAR.—Offers have been on the market of 99 to 100 per cent. at 72s. per cwt., net, and others still quote 75s. The market has been quiet.

EPSOM SALT shows little life: spot parcels of commercial, in single bags, quoted from £5 per ton. Cheaper prices for quantities to arrive.

FORMALDEHYDE continues very quiet, and weak at £39 per ton, for 40 per cent. by volume.

FORMIC ACID is steady, but in no great demand: 85 per cent., £52 10s.; 90 per cent., £54 10s. per ton, in carboys, ex wharf.

GLAUBER'S SALT is slow, with spot parcels of commercial quality quoted at £3 10s. per ton, in single bags.

LEAD PRODUCTS.—Lead acetate is steady but very quiet: brown, £41; white, £43 7s. 6d. per ton, spot. Red lead, imported, £37 17s. 6d., c.i.f. London; white lead, dry, £37 12s. 6d.; ground in oil, £40 12s. 6d., c.i.f. London. The market is slightly easier, closing generally quiet and rather unsettled.

LITHOPONE is steady, and a fair amount of business is being done. Dealers quote best brands 30 per cent. Continental red seal, £20 to £20 7s. 6d. per ton, in casks, ex store; cheaper prices for contracts.

OXALIC ACID remains dull but steady at about 3½d. per lb., spot.

POTASH CARBONATE remains quiet, but prices hold steady: 90 to 92 per cent., £24 10s.; 96 to 98 per cent., £26 per ton, in casks, spot.

POTASH CAUSTIC shows no change from the controlled price of £27 10s. per ton for 88 to 92 per cent. solid, in drums, spot; cheaper prices for contracts.

POTASSIUM CHLORATE is steadier, but business is still poor: crystals, 3½d.; powder, 3½d. per lb., in kegs, for quantities.

POTASSIUM PERMANGANATE remains dull, but prices are not likely to move much lower than to-day's figures of 5½d. to 5½d. per lb., in two-cwt. drums, in quantities.

POTASSIUM PRUSSIAN is a dull market, and 7d. per lb. for yellow, in casks, might be shaded for good business.

SAL AMMONIAC.—No further decline in dealers' prices, although the market is far from firm: dog-tooth crystals, £29 5s.; medium, about £28; fine white crystals, about £19 per ton, in casks, for quantities.

SODIUM ACETATE has been much quieter of late, but Continental producers' prices support the spot price of £20 10s. per ton, in casks.

SODIUM CHLORATE is cheaper, with imported offered at about 3½d. per lb. Market quiet.

SODIUM HYPOSULPHITE shows no change, but business, so far as dealers are concerned, has been quieter. Pea crystals, in one-cwt. kegs, £15 7s. 6d. per ton; commercial quality, £9 per ton, in casks. British makers quote pure crystals for home consumers at £15 10s. per ton, carriage paid to buyer's station.

SODIUM NITRATE is nominal, with the market slack: 96 per cent., £13; refined, £13 7s. 6d. per ton, f.o.r. docks, London.

SODIUM NITRITE (100 per cent. basis) is steady, but not very active: £21 10s. per ton, and 22s. cwt., docks, London.

SODIUM PRUSSIAN is steady but distinctly quiet at from 3½d. per lb.

SODIUM SULPHIDE is steady, with a limited inquiry: 60 to 62 per cent. solid, £10 10s.; broken, £11 10s. per ton, in drums.

SULPHUR is quiet but steady. American crude is £5 17s. 6d. a ton, delivered Manchester, and refined £12 to £12 5s. for Sicilian flowers, and £10 to £10 5s. for roll delivered London warehouses.

COAL TAR PRODUCTS, ETC.—Fitch shows a further big jump on quotation for next season, and the market is very firm. Most other products continue nominal, with supplies lacking owing to the coal mining dispute. **ANILINE OIL** continues to be quoted at the nominal figure of 9½d. per lb., in loaned drums, carriage paid, with supplies very short. **ANILINE SALT** is unchanged and nominal at 9½d. per lb.,

packages extra, carriage paid. **BETANAPHTHOL** is dearer at the nominal price of 1s. 1d. per lb., carriage paid; supplies lacking. **TOLUOL** continues with practically no supplies offering; price nominal. **XYLOL** is firm as quoted, and only small lots are available: pure, 3s. 6d.; commercial, 2s. 5d. per gallon, ex works. **CARBOLIC ACID** is very steady, although in no great demand: quoted at 4½d. to 5d. per lb., f.o.b. in quantities. **CRESYLIC ACID** remains short in supply and nominal at 2s. to 2s. 2d. per gallon, f.o.b. **CREOSOTE OIL** is firm and in limited supply; ex works, 6½d. f.o.b., 7½d. per gallon, in quantities. **NAPHTHALENE.**—Continental makers have formed a syndicate, and prices are likely to advance. As yet there is plenty of material in outside hands offering: flakes, £14 15s.; balls, £14 15s.; powder, £13 17s. 6d. per ton, ex wharf. Pure **METHYL ALCOHOL** is dull and inclined to weaken a little: one-ton lots in drums, ex wharf, £47. **PYRIDINE** remains flat at about 17s. per gallon, f.o.b. **PITCH.**—With the continuance of the coal dispute the position is very firm, and a further sharp rise for next season is recorded at fully 95s. per ton, f.o.b. East Coast.

Fixed Oils, etc.

With the exception of turpentine, products in this section have been very quiet, and a number are now quoted at lower rates with the general tone unsteady. **ACID OILS** are rather dearer, but the market is very quiet: coconut and palm kernel, 41s. 6d.; groundnut, 38s.; soya, 33s. 6d. spot. **CASTOR** remains dull, with prices showing a further fall: pharmaceutical, 48s. 6d.; first pressings, 43s. 6d.; second pressings, 41s. 6d. spot, in not less than one-ton lots. **COCONUT** remains very quiet: deodorised, spot, 53s. 6d.; Ceylon, 45s., c.i.f.; Cochin, 51s., c.i.f. **COTTON** is dull at lower prices, with quotations irregular: deodorised, 49s.; common edible, 47s.; soapmaking, 44s.; crude, 39s. spot. **GROUNDNUT** is very quiet and easy as quoted: deodorised, 55s.; spot; crude Oriental, 46s., c.i.f. **PALM KERNEL** remains dull: deodorised, 47s. 9d.; crude, 44s., spot. **PALM** has been dull all the week, and quoted prices are easy: Lagos, 37s. 6d.; softs, 36s. 9d.; mediums, 37s. 3d.; hards, 37s. 3d.; bleached, 40s. spot. **RAPE** is still lifeless and nominal: refined, 55s.; crude, 53s., spot. **SOYA** is very dull and easy as quoted: deodorised, 46s.; crude, 41s. 6d. spot. **LINSEED** (raw, naked) has been quieter, and prices are lower, closing weak: on spot, 33s. 9d.; August, 32s. 9d.; September-December, 33s.; January-April, 33s. 6d. Boiled oil, spot, 35s. Hull, on spot, 33s. 6d.; August-December, 35s. 4½d.; January-April, 33s. 6d. **TURPENTINE** assumed considerable strength late last week in response to higher cable quotations from Savannah, where the demand was again active. Spot delivery was raised to about 67s. 6d., and September-December to £68 3s., but demand here since the beginning of the week slackened off, and most of the improvement was lost. Market on spot closes at 65s. 6d. per cwt., September-December 66s. 9d., and January-April 68s. 9d. Deliveries for last week were good, amounting to 1,934 barrels, making a total of 73,909 barrels since January 1, as against 61,443 barrels same period in 1925. Including the stocks of 15,229 barrels and quantities landing and afloat at the close of last week the London visible supply totalled 22,436 barrels, which compares with 34,079 barrels a year ago. **RESIN** advanced further, but present high prices are making business difficult, and demand is practically confined to early delivery. C.i.f. terms for American were as follows:—B/D 31s., E/M 33s., N/WG 34s., and W.W. 35s. 3d. On the spot holders are asking about 9d. per cwt. premium. **WOOD.**—Hankow in barrels on spot is quoted at 80s.; market dull.

LUBRICATING, MINERAL, AND BURNING OILS, ETC.—Lubricating oils, although quoted unchanged, are inclined to weaken. Other products show little change. Business generally remains quiet. **BENZOL.**—Quoted prices remain nominal, and production at works is negligible: crude 65s. 1s. 4d. to 1s. 5d.; standard motor, 2s.; pure, 2s. 3d. to 2s. 6d. per gallon, ex works, in tank wagons. **FUEL OIL** continues steady but slow: 950 gravity, £3 17s. 6d.; 890 gravity, £4 7s. 6d. per ton, ex tank. **PARAFFIN WAX** and **SCALE** are steady, but business is quiet: wax, 3½d. to 4½d. per lb., according to melting point, in bags. **Scale** is quoted at about £25 15s. per ton, c.i.f. U.K. port. **PARAFFIN OILS** continue very steady: American standard white, 1s. 1d.; water white, 1s. 2d. per gallon, barrels free; Russian prime white kerosene, 6½d. to 7d. ex tank; 7½d. buyer's barrels filled free, and 11d. barrels free, ex wharf. **WHITE OILS** are unchanged and market quiet: special No. 1, £27; No. 1, £25 10s.; No. 2, £23; No. 3 half-white, £22; No. 4 half-white, £15 per ton, drums and barrels free, ex wharf. **SOLVENT NAPHTHAS.**—Material is still very short and prices are nominal: 90/160, 1s. 11d. to 2s.; heavy 90/190, 1s. 4d. to 1s. 5d. per gallon, naked at works. **PETROLEUM JELLIES.**—Business remains poor and prices unchanged: white to snow white, £35 to £58; amber and yellow, £17 17s. 6d.

to £22; red vet, about £15 7s. 6d.; dark stiff green, £13 per ton, barrels free, ex wharf. LUBRICATING OILS.—The shipment market for cylinder oils is slightly easier, and spot conditions are easy; market still quiet: pales, £10 10s. to £23 5s.; reds, £12 12s. 6d. to £23 5s.; dark cylinders, £13 to £34; filtered cylinders, £20 5s. to £33 15s. per ton, less 2½ per cent., ex wharf, London. SOLUBLE OIL and CUTTING COMPOUNDS, £20 to £21 per ton, net. No. 1 RUSSIAN OIL is offered on spot at £15 5s. per ton, less 2½ per cent., in barrels, ex wharf.

Exchange Rates on London

The following is a list of Continental and other exchange rates against the pound sterling on London prevailing at 4 p.m. on Wednesday:—

Place	Method of Quoting	Par of Exchange	August 18	August 25
Amsterdam ..	Fl. to £	12.107	12.11½—12.11½	12.11½—12.11½
Berlin ..	M. to £	20.43	20.41—20.41½	20.36—20.38
Brussels ..	Fr. to £	25.22½	175½—176	176½—177
Calcutta ..	Perrup.	24d.	18½d.—18½d.	17½d.—18½d.
Constantinople ..	Pst. to £	110	883—893	895—905
Copenhagen ..	Kr. to £	18.159	18.27—18.29	18.27—18.29
Greece ..	Dr. to £	25.22½	440—443	405—415
Hong Kong ..	T. t. \$	—	26½d.—26½d.	26½d.—26½d.
Italy ..	Lire to £	25.22½	147½—147½	147—147½
Kobe ..	Yen	24.58d.	23½d.—23½d.	23½d.—23½d.
Lisbon ..	Escu	53½d.	28½d.—28½d.	28½d.—28½d.
Madrid ..	Pes. to £	25.22½	31.35—31.38	31.52—31.55
Montreal ..	\$ to £	4.86½	4.85½—4.85½	4.84½—4.84½
New York ..	\$ to £	4.86½	4.85½—4.86½	4.85½—4.85½
Oslo ..	Kr. to £	18.159	22.14—22.17	22.15—22.18
Paris ..	Fr. to £	25.22½	169½—169½	169½—170
Singapore ..	Per dol.	—	27½d.—27½d.	27½d.—27½d.
Sofia ..	Lev. to £	25.22½	665—680	670—680
Stockholm ..	Kr. to £	18.159	18.14—18.15½	18.14—18.15
Switzerland ..	Fr. to £	25.22½	25.15—25.16	25.14½—25.15½
Venna ..	Sh. to £	24.02	34.40—34.43	34.38—34.42
Warsaw ..	Zloty to £	25.22½	44—46	44—46

United States Drug and Chemical Imports

THE following table gives the total imports into the United States during the month of May of a number of drugs and chemicals, together with the participation of the chief countries of origin:—

	lb.	Oil, citronella and lemongrass—	lb.
Cinchona ..	549,549	Ceylon ..	27,286
Glycerin, crude ..	1,348,955	Java ..	26,181
France ..	746,390	Brit. India ..	4,480
Spain ..	204,190	Great Britain ..	2,231
Canada ..	85,015	Oil, lavender and spike ..	8,337
Glycerin, refined ..	312,399	Spain ..	5,812
Germany ..	221,013	Great Britain ..	467
Belgium ..	4,000	France ..	2,048
Todine, crude ..	38,270	Oil, lemon ..	34,872
Liquorice extract ..	95,387	Opium, crude ..	9,332
Liquorice root ..	18,567,395	Turkey ..	5,582
Soviet Russia ..	8,348,938	Greece ..	3,750
Turkey ..	6,856,640	Quinine sulphate (oz.) ..	65,000
Syria ..	3,360,000	Senna ..	192,041
Nux vomica ..	342,736	France ..	87,815
Oil, citronella and lemongrass ..	60,228	Egypt ..	100,276
		Strychnine (oz.) ..	10,000

Java Coca Situation

DURING the past two years no regular transactions in coca have taken place in Java; indeed, last year there was only one buyer in the market who, as in previous years, was purchasing solely on Japanese account. Moreover, this buyer was paying lower prices than those laid down by importers in the Netherlands. At first this buyer offered a price corresponding to 75 fl. per percentage of alkaloid content, for one picul, but owing to the anxiety shown by producers to dispose of their stocks of coca locally, prices gradually fell until, towards the end of last year, the highest offer was 30 fl. per percentage of alkaloid, per picul. Growers of coca were so anxious to sell on the local market that one consignment was actually re-shipped from Amsterdam to Soerabaya. In consequence of the large exports of coca, stocks in Amsterdam have accumulated far in excess of the demand, which has declined very considerably, and indeed for some time has practically ceased. It was evident that the future of coca production was in grave peril, particularly since the substitution of other substances for cocaine in course of time is a possibility which cannot be entirely excluded. The purchasers recognised that in order to improve their position it would be necessary to form a powerful organisation, and this was realised in the formation of an association registered in Holland under the title of "Coca-Producenten Vereeniging te Amsterdam" (C. & D., January 16, 1926, p. 102), by which the sale of the product was centralised in the hands of a "Coca

Bureau." Practically all Dutch growers of coca have joined this association, and only the plantations belonging to English undertakings have remained outside. However, since their participation in the production of coca in Java is not very important, it may be said that the bulk of the production is controlled by the new Coca Bureau. Since the beginning of the year sales of coca have shown an improvement, and the heavy accumulation of stocks in Amsterdam is diminishing.

Japan's Foreign Trade

DURING the year 1925 Japan imported goods to the value of 2,572,657,863 yen (1924: 2,453,402,256 yen), while exports figured with 2,305,589,807 yen (1924: 1,807,034,837 yen), so that the excess of imports over exports shows a decrease from 646,367,419 yen, in 1924, to 267,068,056 yen in 1925. Compared with 1924, the past year shows a decline in Japan's trade with Great Britain, in imports as well as in exports; imports from Great Britain fell from 312,751,429 yen in 1924, to 227,292,002 yen in 1925, and exports from 61,044,019 yen in 1924, to 59,716,478 yen in 1925. On the other hand, Japan's imports from British India, Dutch East Indies, French Indo-China, Siam, Austria, Turkey, Cuba, Peru, Egypt, Cape Colony, Natal, and Australia show an appreciable increase over the values recorded for 1924, and the same applies to exports to China, British India, Straits Settlements, Dutch East Indies, French Indo-China, Philippine Islands, Siam, Germany, Italy, Switzerland, Russia, Poland, Spain, Denmark, United States, Canada, Mexico, Cuba, Cape Colony, Natal, Australia, and Hawaii. Last year shows a definite contraction in Japan's trade with Europe, exports to European countries falling from 175,050,735 yen in 1924, to 152,602,160 yen in 1925, and imports from 581,091,478 yen in 1924, to 447,771,494 yen in 1925. The following figure among the goods imported into Japan, whereby the corresponding figures for 1924 are given in parenthesis; where not otherwise stated, all amounts are in kin:—Castor oil, 519,762 (1,470,406); soaps, perfumed, 39,019 (373,103); soaps, others, 110,671 (328,395); perfumed oils, fats, waxes, 42,856 (246,351); perfumed waters, 50,876 (267,811); liquorice, 27,053 piculs (19,958 piculs); cinchona, 851,332 (2,007,438); gum arabic, 955,615 (1,272,116); boric acid, 1,129,657 (1,336,480); oxalic acid, 515,210 (1,087,805); tartaric acid, 506,948 (585,506); salicylic acid, 262,283 (388,623); carbolic acid, 1,845,626 (1,964,366); citric acid, 94,305 (118,974); borax, 6,714,232 (5,248,212); potassium bromide, 45,205 (139,445); glycerin, 2,984,614 (4,002,074); milk sugar, 576,570 (492,212); opium, 33,850 (18,192); acetanilide, 209,142 (177,429); antipyrin, 881,743 oz. (1,118,327 oz.); santonin, 1,840 oz. (49 oz.); quinine, 328,360 oz. (302,679 oz.); morphine, 34,442 oz. (30,954 oz.); guaiaccol carbonate, 415,779 oz. (650,109 oz.); alcoholic medicinal preparations, 146,513 litres (197,765 litres); tooth powders and other prepared perfumes (value), 223,241 yen (1,374,729 yen); mercury, 491,389 (422,139); bismuth, 41,882 (25,869). The following Japanese exports are of interest to our readers:—

	Camphor		Menthol	
	1924	1925	1924	1925
	Piculs	Piculs	Piculs	Piculs
British India ..	6,243	6,100	207	375
Great Britain ..	2,147	3,872	356	534
France ..	2,298	3,177	204	421
Germany ..	2,042	2,408	491	221
United States ..	15,300	14,922	1,311	2,517
Australia ..	729	808	—	—
Other countries ..	2,875	3,113	130	340
Total ..	31,634	34,400	2,699	4,208

Camphor oil, 1,624 piculs (1,683 piculs); peppermint oil, 5,284 piculs (2,965 piculs); ginseng, 564 piculs (1,109 piculs); iodine, 22,180 (8,512); copper sulphate, 694 piculs (520 piculs); potassium iodide, 18,463 (5,453); insect powder, 4,268 piculs (4,179 piculs); tooth powders and pastes (value), 584,486 yen (488,134 yen); toilet powders (value), 270,962 yen (245,622 yen); prepared medicines (value), 1,389,908 yen (1,352,206 yen).



Letters for this section should be written on one side of the paper only. Correspondents may adopt an assumed name for purposes of publication, but must in all cases furnish their real name and address to the Editor.

"The Plague of Insects"

SIR,—There is general agreement in regard to the increased plague of insects this summer, and, so far as my experience goes, the lotions and creams that one is allowed to sell fall very far short of perfection. Would it not be interesting to learn from some of our lady pharmacists what their experiences may be in the matter of relief and cure? First, they no doubt indulge the weakness of their sex for thin material coverings; and secondly, they are probably, like their fathers and brothers in the trade, accustomed to doctor themselves and apply their own remedies. My own daughters have returned from a holiday abroad badly bitten—a fact that has kept me busy lately trying remedies. I just now used the words "allowed to sell"; the obvious explanation is that the best remedies will have to be looked for in the poison-cupboard; therefore, thanks to our wooden-headed laws and regulations, most of our bitten population continue to suffer. So far as concerns preventives, the oils of lavender and eucalyptus are to be relied on, and I think the constant use of an antiseptic soap (10 per cent. carbolic) helps to keep off the pests. Lavender oil with a small percentage of phenol may safely be used, and is good. Quinine solutions, also quassia dabbed on the skin and allowed to dry, may be suggested. The advice "Don't scratch" is a counsel of perfection. The advice to dab on the part cotton-wool soaked in a mixture of methylated spirit and glycerin is good. This preparation, at least, might be carried by holiday folk; and they should be encouraged to add small bottles of sal volatile, menthol in spirit, ammoniated iodine, aqua lavand. c. phenol. 3 per cent. But for the most part we get our customers back with the mischief done. The itching is allayed and kept under by wet compress or bandage saturated with a boric acid lotion 4 per cent., or liq. hamamelidis, rather weak, or a spirit lotion containing liquor plumbi, or a plain lead lotion with or without opium. Any greasy preparation is of more value—if used freely—to keep off the insects. For plain healing purposes, boric acid lotion suits some skins better than the ointment. Anti-fly ointments or creams are often an aggravation to an inflamed patch.—Yours, etc.,

PATER (20/8).

The Postmaster-General Enters Business

SIR,—The recent proposal of the Postmaster-General to "frank" postage stamps with advertisement matter, has raised quite a cyclone in advertising circles. Hitherto the authorities have used this method of publicity only in the national interest; for example, the Post Office is stamping our envelopes with the reminder that "British Goods are Best." Little objection can be raised to such generalities, but it is easy to foresee trouble when the space is placed at the disposal of individual manufacturers. Let us imagine that a cigarette firm named Jones & Co. is sending out circulars advertising its wares. It will be very annoying for Messrs. Jones if every one of the envelopes is franked with the slogan, "Buy Smith's Cigarettes." In self-defence, Messrs. Jones might instal a special franking machine on the premises, so as to ensure that the message on the envelope corresponded to the advertisement enclosed. The question arises whether the Post Office is entitled to sell space on the envelopes and postcards entrusted to its care. The advertising profession, as a whole, is opposed to this latest effort on the part of the Government to open out new sources of revenue. As yet there is no sign that the proposal will be withdrawn, and advertising agents have already been appointed. Probably a middle course will be found between national and individual advertising, in what may be termed "group publicity." In this case our postal matter will carry

such advice as "Eat more Fruit," "Buy British Beef," or "Drink more Milk."—Yours, etc.,

SCUTA (25/8).

A Dangerous Drugs Act Suggestion

SIR,—We can carry out the intention of the Act without any trouble in 90 per cent. of shops if we can get tr. opii made for us with gr. j. of morphine hydrochloride to 1 oz. Big dispensing houses seem to thrive on regulations: at least, we never hear them raise any objections, so that I am writing for the commercial chemist who has not much time for any more regulations. There's no money in poisons: why, therefore, worry about them? Just refuse them. Paregoric (1914) is roughly gr. $\frac{1}{4}$ of morphine hydrochloride to 1 oz. Chlorodyne (1885) is roughly gr. j. to 1 oz. These are the popular sellers, and the Act exempts 1 in 500. Tr. opii is:—(1898) gr. iij. morph. hydroch. to 1 oz.; (1914) gr. ivss. to 1 oz. Most certainly it made any reputation is has for veterinary use in the days when everybody made it with gum. opii, and made it no stronger than gr. j. to 1 oz. Even the 1898 B.P. was very loosely standardised, and was much too strong at that, so why argue about it? If we get laudanum as strong as chlorodyne (1885), and four times stronger than paregoric—well, I vote we call it tr. opii, 1926, and let it go at that. The poison cupboard we all have, and the lock—and the key. But let us get that laudanum. If we label it, we are safe.—Yours, etc.,

JAY MACK (20/8).

Dispensing Difficulties and Notes

A Troublesome Constituent

SIR,—Please state if the following can be dispensed in a satisfactory manner:—

Menthol	...	...	...	gr. iij.
Cocain.	...	...	...	gr. ij.
Acid. boric.	...	...	...	gr. xx.
Spt. vini rect.	...	...	...	3i.
Aq.	...	...	...	ad 5ij.

Yours faithfully,

INTERNOL (6/5).

[Menthol is the troublesome constituent. Being insoluble in the liquid, it floats on the top and will not diffuse when the compound is shaken. To employ a sufficiency of spirit to dissolve the menthol would unduly raise the cost, and would probably be open to objection in application. The compound seems as if it might be intended for use as a spray, and if this be so, a suspending agent is also ruled out as unsuitable. The remaining procedure is to emulsify the menthol so that it will diffuse evenly when shaken and remain diffused for an appreciable time to permit the preparation to be satisfactorily applied or sprayed. This can be accomplished in the following manner:—Dissolve the boric acid in the water; place the menthol and cocaine (hydrochloride no doubt intended, cocaine alkaloid being insoluble in water) in a mortar with the rectified spirit and half a grain of saponin, and triturate together, then introduce gradually the solution of boric acid.]

Purity of Phenacetin

SIR,—I recently had to make powders each containing:—

Phenacetin.	...	...	...	gr. viij.
Caffein. cit.	...	...	...	gr. ij.

On mixing the powders a pink hue was imparted to the mass. Can you offer any explanation?—Yours faithfully,

G. S. W. (27/7).

[The coloration which you describe has not come under our observation. Since receiving your inquiry we prepared several experimental lots of the powders, using material from different sources and mixing in different ways, but we have not obtained a colour in any instance after ten to twelve days. The origin of the coloration is some accidental contamination. The most probable suggestion is that the phenacetin contains a minute trace of para-phenetidin, which affords a pink coloration with some reagents. The Pharmacopœia provides a simple test to indicate the presence or absence of this impurity in phenacetin.]

Fungus in Quinine Mixture

SIR,—With reference to the letter from "F. L." and your note in the *C. & D.* of August 14 on the above-mentioned subject, I have experienced considerable annoyance lately with fungoid growth in emulsions, and have traced the source of infection to the corks, which I have found full of spores. The only effective means of sterilising these appeared to be by dipping them in a mixture of melted hard paraffin wax with 1 per cent. of acid. carbolic. crst. Some fungoid spores are very resistant, and even boiling for half an hour at 100° C. does not seem to affect them. Should your correspondent examine his corks he will probably trace the fungoid growth in the quinine mixture to the same cause. The use of sterile waxed corks in dispensing should be a great improvement on the present practice.—Truly yours,
J. COFMAN-NICORESTI.
London, S.W.4.

SIR,—The quinine mixture referred to on p. 347 is interesting, for I had a similar experience. In place of glycerin and phosphoric acid, however, were syrup of red poppy and diluted sulphuric acid. The fungus made its appearance though the mixture had been made with tap-water having the reputation of being bacteriologically pure. The only remedy was found to be the use of chloroform water.—Yours, etc.,

ABEL SCHOLAR (18/8).

Legal Queries

E. W. E. W. (8/8).—The regulations under the Dangerous Drugs Acts dealing specially with the drug supply by public institutions were last given in detail in *The Chemist and Druggist Diary*, 1924, p. 258. There has been no substantial alteration in these regulations since then.

T. L. B. (7/8).—"Bismuthated Magnesia Indigestion Mixture" is a dutiable title under the Medicine Stamp Acts, unless the name correctly describes the composition. In the latter case the article becomes a "known, admitted and approved" remedy, which chemists may sell unstamped.

B. R. (11/8) bought a house and gave the tenant notice to quit in March 1925. The tenant refuses to go; is it permissible to increase the rent? If "B. R." sells the house, will the purchaser be able to obtain possession of part of the house to live in? At present the house is occupied only by a man and his wife. [If either the rent or the rateable value in August 1914 did not exceed £78, the house comes within the protection of the Rent Restriction Acts, and the rent cannot be increased by more than the amount permitted by those Acts—that is to say, the rent must not, in the ordinary way, exceed the pre-war rent by more than 40 per cent. However, the full 40 per cent. increase cannot be charged unless "B. R." is responsible for all repairs. An additional increase may be permissible upon the ground that "B. R." pays the rates, that the tenant has sublet part of the premises, or that the house has been improved structurally. The purchaser could obtain possession of part of the house only with the sanction of the County Court, which might be given if the circumstances warranted such a course.]

Aqua Dist. (14/8) purchased a business for which he paid by weekly payments, the whole of the purchase money being now nearly paid off. The payments having been made out of the takings of the business, the income-tax authorities are claiming income-tax on the whole of the £950 purchase money thus paid. "Aqua dist." asks if he has any remedy by appeal or otherwise against this claim? [If the time for appealing has not expired (twenty-one days from date of notice of assessment), an appeal can be lodged to be heard before the District Commissioners, and the question then to be settled will be whether or not the money paid for the business represented profits of the business, not necessarily the takings. If it did, it will be assessable, but not otherwise. If the £950 represented an advance from some society, repayable weekly with interest, "Aqua dist." would not be liable for income-tax on the sums paid weekly so far as these were interest on the capital advanced. If the time for appeal has expired, there is no legal remedy.]

Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

H. S. (24/7).—WOOD-FILLING.—The kind generally employed before staining a floor is plaster of paris mixed to a cream with water and rubbed into the wood. The plaster should be coloured with ochre or umber beforehand to correspond to the stain that is to be used. Other stopping materials used have casein as a base mixed with solution of ammonia and lime to make it soluble, and water. Glue, cement and water are also employed.

Sulphur (25/7).—SULPHUR DIOXIDE is a gas, and exists in commerce as sulphurous acid, a liquid corresponding to 5 per cent. by weight of sulphur dioxide. A powder form is not feasible, owing to the volatility of the sulphur dioxide, but solid forms are represented by sodium metasuiphite and sulphite, referred to in the *C. & D.*, February 7, 1925, p. 196. These could be diluted with salt (not at present a prohibited preservative), so as to form a suitable powder for use as a food preservative by butchers and others.

J. W. (25/7).—QUININE TABLETS.—When making quinine sulphate into tablets the addition of sugar 10 per cent. and powdered acacia 5 per cent. is required as adhesives, with starch 10 per cent. as a disintegrator. Large makers dry the quinine at 125° F. for several hours and add 11.5 per cent. of dried powdered starch so as to prevent changes due to efflorescence.

Astringent (17/8).—See article on pp. 395-96 of this issue.

North City (17/8).—In England the salary of an assistant dispenser (institution) starts at about £250 per annum, with most of his meals when on duty. He can rise to the senior position (about £400 per annum, with or without lunch). Your inquiry is somewhat vague as to what further service is demanded; if a dispenser is only called upon to give three hours' service daily, the salary is about £150, based on corporation appointments. A Poor-law officer is entitled to pension after ten years' service at the rate of one-sixtieth part of his salary for each completed year's service; the guardians may, with the consent of the Ministry of Health, add years of service up to ten for special professional services.

Retrospect of Fifty Years Ago

Reprinted from
"The Chemist and Druggist," August 15, 1876

Phosphate of Iron and its Syrups

Notwithstanding all that has been said and written of late (including all the suggestions and improvements) regarding the various preparations of phosphate of iron, it must still be confessed that there is much about each and all of them exceedingly unsatisfactory, if not decidedly objectionable. No preparation can be considered otherwise than objectionable which is subject to the same amount of variation in strength, general appearance, taste, and doubtless also in therapeutical effect, such as are found in these preparations, and the only wonder is that they have gained and still retain their popular hold alike on the professional and public mind. Their popularity, indeed, so far from lessening, seems day by day to be increasing, and any suggestions, therefore, which tend in the direction of improvement, even although they be, like so many of their predecessors, only empirical in their character, will doubtless be received with satisfaction and attention. The experiences contained in the present paper were derived from a long series of experiments undertaken for the express purpose of determining the relative values of the Pharmacopœia process for the official preparations of phosphate of iron, with that of the process (immediately to be described) contained in the French Codex, and they bring out several features in the former which, though incidentally touched upon by one or two writers lately, it is to be feared are but partially known, and their importance, in consequence, insufficiently appreciated. [The article then gives formulas and criticisms of the various syrups.]



[Commenced C. & D., July 5, 1924]

Glucose, Medicinal.—A colourless crystalline powder, free from odour. It differs from pure anhydrous glucose in containing water of crystallisation. In medicine, glucose solutions are being increasingly used for injection in place of normal saline solution, as it has the advantages of not injuring kidney tissues and of having a decided nutrient value. Isotonic solutions (containing 5 per cent. by weight of pure glucose) are injected subcutaneously or intravenously when it is desired to remove toxins, while hypertonic solutions are used per rectum or intravenously to promote copious diuresis and consequent dehydration of the blood. The solutions are sterilised by boiling for ten minutes. Glucose tubes for injection or artificial feeding are put up containing each about 1½ oz. of strong glucose solution, which, when made up to a pint with boiled distilled water, produces a 5 per cent. solution. Glucose injections are becoming a routine method of guarding against post-operative shock, particularly in extensive abdominal operations. Rectal feeding with glucose solutions is of great service in various toxæmias and conditions which prevent ordinary ingestion of food, these including toxæmias of pregnancy, broncho-pneumonia, appendicitis and its sequelæ, typhoid fever, enteritis, and strictures due to chronic ulceration or growth (such as cancer of the throat or stricture of the pylorus).

Glucose, Use in Confectionery.—The use of glucose in fondants and cream centres in confectionery is based upon its forming microscopically small crystals which have a velvety appearance and feel, and it is becoming a necessity to makers of candies, milk chocolate, chewing gum and icings. Glucose is well adapted to making preserved fruits, as, owing to its less sweet taste, it does not mask delicate fruit flavours. Its diminished sweetness is also leading to its employment in the manufacture of condensed milk.

Glue is a term which should only be applied to true glues consisting of impure gelatin. Custom has, however, led to casein glue, fish glue, liquid glue and other adhesives for use with wood and paper being designated as "glues," though these are devoid of the gelatin characteristic of real glue. Bone glue and hide (or skin) glue comprise the two most important types of commercial glue, the kind of raw material and also the care in sorting and preparing it having a marked influence on the characteristics of the glue prepared therefrom. Glues are usually specifically sold as bone glues or hide glues, whether in sheet or powder, but various other appellations or brands are applied, such as English "Star and Anchor." The use of a national name signifies rather a type than the actual country of origin. Thus Scotch glue is not necessarily made in Scotland, but applies to slabs of glue about 10 × 6 in. and ½ in. thick. These are almost black in appearance, but deep claret colour when held up to the light. Scotch glue is so tough that a hammer is required to break it, and so thick that twenty hours' soaking is needed to soften it. Both dark colour and toughness give an impression of "strength," but colour cannot be taken as any criterion of quality as regards glue. English glues in cakes (6 × 3 in.) have a reputation of their own in woodworking industries, owing to careful selection and picking over of the raw material. In solution it combines low viscosity (and penetration of wood), with high tensile capacity. French glues, generally in sheets about 10 in. square, are stronger and thinner than the other Continental glues, the better grades being really low-grade gelatins. Germany supplies medium-grade bone glues to best advantage, often with attractive addenda, such as fat-free, lime-free, which should always be the case. So-

called German hide glues are apt to be mixed glues. Cologne glue in small square cakes (very thick and very hard) was formerly held to be the typical hide glue, but cheap imitations have destroyed its good reputation. American glues are supplied ordinarily as powder or in thin flakes, and sometimes as ribbons or "noodles" consisting of twisted strips. Bazaar glue for the East consists of low-grade glue in sticks about 8 in. long and 1 in. square. Concentrated size consists of ground glue or by-product glue from low-grade glue liquors obtained on a third or fourth extract of glue-yielding material. Size used by the house painter consists of concentrated size diluted with chalk, whiting, or clay, with or without the addition of alum or soap. It contains usually about 30 per cent. of glue. [The term size is also used for varnish products (e.g., gold size) free from glue.] The origin of glue is by boiling collagens (*see Gelatin*), which comprises the ossein of bones and skin. Chondrin allied to gelatin (but of weaker adhesive power) is also present in glue, being formed from the chondrigen of cartilage.

Bone Glue.—Degreased bone is used for making this glue, the fat being removed by solvents (using petroleum naphtha) or by heating under pressure with steam. The degreased material is cleaned by rotation on a screen or perforated drum, and extracted with water by autoclaving at 15 lb. steam pressure. The pressure is then reduced in order to cause exudation of glue from the bone, which is washed off by a downward spray of water. The operations are repeated until the glue liquor contains about 20 per cent. of solids. After clarification by standing, surface grease is removed by skimming and potash alum (½ per cent.) is added to assist clarification. The clear product is concentrated in multiple-effect vacuum evaporators. The strong liquor may be partially decolorized by treatment with sulphur dioxide before running into jelling troughs. The jelly is cut by a wire into suitable-sized slabs. These, which are some inches thick, take four or five days to dry in a current of air kept below 25° C. and of controlled humidity. Ossein is made by decalcifying degreased bones with 2 to 5 per cent. hydrochloric acid, and consists mainly of collagen, which is converted by boiling into glue.

Hide Glue is made from clipping of hides, ox tails and ears, rabbit skins, or any untanned material, including parchment, pig skin, and old gloves. The primary process is depilation, or removal of hair with sodium sulphide or lime-soda mixture, after which the skins are washed with water and dilute hydrochloric acid. A final wash with water follows. Excess of water is pressed out, and the skins are bagged and the glue extracted and dried in the same way as from bones.

The grading and testing of glue is a matter of personal knowledge and experience, not only of the idiosyncrasies of the glue itself, but also of the purpose for which it is to be used. Chemical tests relate to determination of moisture (usually 10 to 14 per cent.), ash, fat and acidity. The odour provides a guide to its keeping qualities, and sulphur dioxide or other preservatives should be tested for. Jelly strength in 10 per cent. or 12½ per cent. solution is the best method of judging the quality of glue, either by the finger "test" or the cooled jelly. The Bloom gelometer is an instrument which automatically records the weight of shot required to cause penetration of jelly to a definite depth by a plunger of standard dimensions. This is a modification of the Lipovitz test, which is much simpler and has long been in use for testing jelly strength by penetration. In this the disc stands on a 10 per cent. jelly and shot is added to a pan affixed thereto until the disc enters the jelly.

Fish glue takes the form of a thick viscid fluid with rank fishy odour, which may be partially disguised by sassafras or wintergreen oils (added as safrol or methyl salicylate). It is made by autoclaving fish offal (heads, bones, and skins of haddock and other fish refuse from salting sheds), with subsequent concentration and bleaching, as with ordinary glue. The colour varies from brown to light yellow, the latter being due to bleaching or the addition of zinc oxide. A preservative, such as phenol or cresol, is added. Fish glue is tenacious, pulling out into long strings, which are regarded as indicative of great adhesive power, but its



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tenacity in jointing wood is much less than that of ordinary glue.

Diamond Cement and Seccotine are adhesives made by dissolving glue in glacial acetic acid.

Marine glue is a waterproof cement free from glue, made by incorporating a solution of rubber in light petroleum with melted asphaltum.

Sinclair's Glue, used in surgery for affixing extensible instruments, consists of 4 per cent. calcium chloride solution, 50; glue, 50; glycerin, 2; and thymol, 1.

The uses of glue are innumerable, the principal ones being wood jointing and veneers, box-making, or book-binding. As size it forms part of surfaced papers and textiles, and is used in preparing walls for paint or paper. Softened with glycerin, it forms the flexible glue used for printers' rollers and hectographs (duplicating machines), and as moulding material for plaster of Paris casts.

Gluten of commerce consists of a yellowish-grey or light-brown powder containing about 5 per cent. of starch, which cannot be separated by washing. Gluten consists mainly of the two proteins gliadin and glutenin, present in white flour (obtained from the endosperm of wheat grain). The tenacity of a dough made from flour and water depends upon the physical properties of its gluten, which varies according to climate and soil from the "hard" Manitoba wheat to "soft" Australian grain. The blending of wheats for flour is an art to secure suitable proportions of gluten in the flour to make a plastic dough, which "proves" well with yeast and rises suitably when baked. The even texture of good bread depends upon the non-coalescence of films of heat-coagulated gluten which have been expanded during baking by gaseous carbon dioxide from the fermenting yeast. Wheat flour contains 10 per cent. to 14 per cent. of gluten, which is separated by kneading in mixing machines with water and periodically pouring off the suspended starchy matter until a glutinous residue remains. The gluten loaves supplied to diabetic patients were originally made from wet gluten, but are now prepared from dry gluten swollen with water and yeast. The glutinous mass expands enormously on baking quickly into a light cellular mass with flaky walls of protein. Gluten loaves have been largely supplanted by starchless casein bread, but smaller dinner rolls are still popular with diabetics.

Gliadin, which is almost-insoluble in water, is the constituent of gluten which gives dough its tenacity. Its physical properties depend also upon the glutenin entangled therein, but more especially upon the salts (electrolytes) present in the dough. The addition of salts will often improve a poor flour, hence one of the uses of bread improvers (which also act as yeast food). Gliadin is a protamin or alcohol soluble protein (dissolving freely in 70 per cent. alcohol, but not in absolute alcohol). A high proportion of glutaminic acid enters into its composition, but glycine and lysine are absent, and its content of basic amino-acids is low. Glutenin is characteristic of the class of proteins termed glutelins. It is insoluble in water, but dissolves in dilute caustic or carbonated alkali. The elementary composition of gliadin and glutenin are as follows:

	Car- bon	Nitrogen					
	%	Non- basic	Am- monia	Basic	Hydro- gen	Oxy- gen	Sul- phur
Gliadin	52.72	12.17	4.33	1.09	6.86	21.73	1.03
		Total N. 17.66					
Glutenin	52.34	11.95	3.30	2.05	6.83	22.26	1.08
		Total N. 17.49					

Osborne and Clapp obtained the following cleavage products (amino-acids, etc.) by hydrolysis of the two protein constituents of gluten. The figures relate to percentages which owing to difficulties of analysis must be regarded as approximations:—

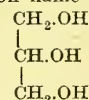
					Gliadin	Glutenin
Alanine	..	..	..	..	2.00	4.65
Ammonia	..	..	..	..	5.11	4.01
Arginine	..	..	..	..	3.16	4.72
Aspartic acid	..	..	..	..	0.58	0.91
Cystine	..	..	..	..	0.45	0.02
Glutaminic acid	..	..	..	..	37.33	23.42

		Gliadin	Glutenin
Glycine	.. .. .	0.00	0.89
Histidine	.. .. .	0.61	1.76
Leucine	.. .. .	5.61	5.95
Lysine	.. .. .	0.00	1.92
Phenylalanine	.. .. .	2.35	1.97
Proline	.. .. .	7.06	4.23
Strine	.. .. .	0.13	0.74
Tryptophane	.. .. .	Present	Present
Tyrosine	.. .. .	1.20	4.25
Valine	.. .. .	0.21	0.24
		65.80	59.63

The gluten wheat endosperm and the proteins of wheat integument (or wheat bran) differ markedly in composition, and owing to its comparatively low content of the nutritionally essential amino-acids (tryptophane, tyrosin, etc.), gluten is considered to be of poor biological value compared with bran proteins, which are particularly rich in these constituents.

Gluside or Glusidum (see Saccharin).

Glycerin is the common name for glycerol,



a trihydric alcohol, which (along with fatty acids in the form of fatty acid esters or glycerides) constitutes the bulk of natural fats and oils. The latter comprise basic materials in the soap and candle industries, and are the ultimate source of the glycerin of commerce. Medicine and industry are indebted to the manufacture of stearin candles for the production of glycerin originally as an article of commerce. Though this industry still supplies the highest grades of glycerin (e.g., Price's glycerin), the modern source of glycerin is chiefly as a by-product recovered from the "sweet waters" or "lyes" obtained during the manufacture of soap. The production of crude glycerin is thus dependent upon what process is adopted in "splitting" fats.

Crude Glycerins of different varieties are accordingly met with in commerce, which are distinguished as:— (1) Crude saponification glycerin, (2) soap lye glycerin, (3) crude distillation glycerin, (4) fermentation crude glycerin, (5) Twitchell crude glycerin. This origin is important, as the further purification of glycerin is bound up with the kind of impurities present in the crude glycerin. Thus, though chemically pure glycerins which are quite indistinguishable may be derived from either soap or candle material, certain saponification processes, such as acid saponification, Twitchell saponification process, and enzyme hydrolysis (or fermentation) yield crude glycerins containing organic impurities so closely allied to glycerin that they are exceedingly difficult to eliminate. Such crude glycerins are, therefore, not suitable for making glycerin intended for use in medicines or food-stuffs. Crude glycerins are normally sold by makers or through brokers on a standard glycerol content, that for soap lye crude glycerin being 80 per cent., and for saponification crude glycerin 88 per cent., the price being increased or diminished *pro rata* according to analysis. Limits have been agreed upon for minimum glycerol content, ash, and organic residue, which provide the buyer with right of rejection when these are contravened. The percentage of ash and organic residue and their character aid in identifying the original source of a crude glycerin. Thus saponification crude glycerin obtained by splitting fats by autoclaving has a low ash content (0.5 being standard, but up to 2.0 per cent. is permissible), and represents a high-grade crude glycerin. Soap lye crude glycerin contains a considerable proportion of common salt, and thus has a much higher ash content (standard 10 per cent., with limit of 11 per cent.). Its quality depends upon the quality of material saponified, which is reflected in taste and colour. Soap lye crude glycerins are an important source of distilled glycerin, but if low-grade rancid fats or impure alkali (containing sulphides), be used the resultant crude

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glycerin is useless to the refiner. Crude distillation glycerin is a by-product of the acid saponification of fats with sulphuric acid. (It is the fatty acids that are distilled for candle making, *not* the glycerin, though the latter is so named.) Since lime is used to neutralise excess of sulphuric acid in the "sweet water," this crude glycerin may contain 2 per cent. or more of ash (chiefly calcium sulphate), and give a turbidity on adding hydrochloric acid due to fatty acid. It is sold as crude distillation glycerin, 28° Beaumé (s.g. 1.240 to 1.242). Fermentation crude glycerin and Twitchell crude glycerin are only suitable for technical purposes, as for refining they contain too many organic impurities, including trimethylene glycol, derived from the fermentation of fats.

Commercial Refined Glycerin is an almost white grade of glycerin intermediate between crude glycerin and distilled glycerin. It is made by decolorising crude glycerin by treatment with bone char (animal charcoal). It is replacing distilled glycerin for some technical purposes.

Distilled Glycerin is obtained by distillation of crude glycerin, usually *in vacuo*, with the aid of superheated steam, the product being collected in a series of condensers. Deposition of salts is the chief difficulty in refining glycerin, so that stills require to be fitted with scraping devices. Fuel economy may be effected by two-stage distillation or by plant arranged to provide continuous distillation. The main object in distillation is to prevent loss of glycerin by dehydration or condensation due to high temperature or presence of concentrated solution of salts, which result in the formation of evil-smelling acrolein and also in the production of polyglycerols. Commercial distilled glycerin, s.g. 1.240 to 1.250, is used for many technical purposes—e.g., manufacture of printers' rollers and sealing fluid in gas meters. A more recent use is as an antifreeze for motor radiators, the demand for which in America is leading to shortage of glycerin supplies. Dynamite glycerin (for manufacture of nitroglycerin) is singly distilled glycerin with a specific gravity of not less than 1.261 at 15° C. Distilled glycerin is white to pale yellow in colour, and its very low ash content readily distinguishes it from commercial refined glycerin.

Glycerin Foots are the residues remaining in the stills after distillation of glycerin, and consist chiefly of polyglycerols and salts. They are used in the manufacture of blacking.

Chemically Pure Glycerin is also known as double-distilled glycerin, because a second rectification is needed to produce (from distilled glycerin) glycerin sufficiently pure to meet pharmacopœial requirements (s.g. 1.260, with arsenic limit of 4 parts per million), which corresponds to about 98 per cent. of glycerol. Glycerin gradually crystallises when exposed to temperatures below zero (−5° to −10° C.), but can be solidified at 0° C. by seeding with glycerin crystals. It remelts at 20° C. Glycerin boils at 290° C., with slight decomposition, but distils unchanged at reduced pressure (210° C. at 50 mm. and 55° C. at 5 mm.). Glycerin inflames at about 150° C., burning with a flame resembling that of alcohol. Chemically pure glycerin has an appreciable vapour pressure at 100° C. (over 100 mm.), and in concentrating glycerin solutions by evaporation considerable loss of glycerol occurs when the glycerin content exceeds 70 or 80 per cent. Glycerin is miscible with alcohol in all proportions and dissolves in acetone, but it does not mix with oils, chloroform, ether, benzene, or petroleum spirit. Glycerin is miscible with water in all proportions with a small increase in temperature and slight contraction in volume (maximum contraction being just over 1.0 per cent. with 42 parts of water and 58 parts of glycerin by weight, the temperature rise being 5° C.). The specific gravity of pure glycerol is very close to 1.265 at 15° C. (compared with water at 15° C.). The table of specific gravities below gives directly the strength of mixtures of pure glycerin with water. The strength and viscosity of commercial glycerins vary with their gravity, these being supplied as (1) s.g. 1.26, (2) s.g. 1.25, or (3) s.g. 1.24. Chemically pure glycerin is a water-white, odourless fluid, having

a characteristic sweet taste with a somewhat burning after-taste. Glycerin is highly hygroscopic, absorbing up to 50 per cent. of its weight of water. The tingling sensation produced by glycerin on the tongue or broken skin is due to absorption of water. Diluted with rose water or in the form of glycerin jelly, it is a favourite method of preventing exfoliation of the epidermis; but this action of glycerin is more due to its hygroscopic character than to being an actual skin emollient. In pharmacy glycerin is used as a demulcent in cough syrups. It enters into glycerinated extracts as a preservative solvent intended to replace dutiable alcohol. Such glycerinated extracts have not gained an extended use in medicine, except in the case of cascara sagrada, though excellent products are obtained from senna, gentian, senega, squill and other popular drugs. Thus it would appear that flavour is equally as important in medicine as therapeutic activity. Glycerin is an important ingredient in medicated throat pastilles and black currant or other fruit pastilles. The medicinal uses of glycerin are as an enema or suppository to relieve constipation. It is the active ingredient of certain proprietary substitutes for poultices, cataplasma kaolini being regarded as their equivalent. Glycerol combines the solvent action of water with that of an organic compound. Hence it is an excellent solvent for certain medicaments, such as iodine and tannic acid, whilst its taste relieves the astringency of gargles containing ferric chloride or alum. Owing to its viscosity, solution in glycerin is usually aided by the application of gentle heat as well as stirring. The quantities in the following table relate to amount of substance dissolved in 100 parts by volume or to grains dissolved by each fluid ounce of glycerin:—

SOLUBILITIES IN GLYCERIN B.P.

	Parts per 100 glycerin by vol.	Grains per fluid oz.
Acid, benzoic	10	50
Acid, boric	20	110
Acid, gallic	8	40
Acid, salicylic	0.4	2½
Acid, tannic	75	380
Alum	40	200
Ammonium carbonate	20	100
Ammonium chloride	20	100
Antimony tartaratum	4	20
Atropine	3	15
Atropine sulphate	32	160
Barium chloride	10	50
Borax	75	380
Calcium sulphide	5	25
Cinchonine	0.5	2½
Cinchonine sulphate	6.5	33
Cocaine hydrochloride	29	145
Copper acetate	10	50
Copper sulphate	30	150
Ferrum tartaratum	8	40
Iodine	1½	7½
Iron sulphate	25	120
Lead acetate	20	100
Mercury iodide, red	0.3	1½
Mercury perchloride	7.0	35
Morphine	0.4	2½
Morphine acetate	20	100
Morphine hydrochloride	12	60
Oxalic acid	15	75
Phosphorus	0.2	1
Potassa sulphurata	10	50
Potassium acetate	—	—
Potassium arsenate	50	240
Potassium bromide	25	120
Potassium cyanide	32	160
Potassium chlorate	3.5	17½
Potassium iodide	40	200
Quinine	0.5	2½
Quinine sulphate	2	10
Quinine tartrate	0.2	1
Sodium arsenate	50	250
Sodium bicarbonate	8	40
Sodium carbonate, cryst.	98	490
Strychnine	0.2	1½
Strychnine nitrate	4	20
Strychnine sulphate	20	100
Sulphur	0.2	1
Sulphur iodide	1.6	8
Veratrine	1	5
Zinc chloride	50	240
Zinc iodide	40	200
Zinc sulphate	32	160

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Glycerin, Commerce of.—The following tables show the imports, exports and re-exports of crude and distilled glycerin from the United Kingdom during the years 1920, 1921, 1922, 1923 and 1924 :—

Imports of crude glycerin into the U.K.

From	1920	1921	1922	1923	1924
	cwt.	cwt.	cwt.	cwt.	cwt.
Netherlands	2	1,368	1,921	2,835	26
Belgium	1,018	1,686	5,307	1,813	18,863
France	6,493	21,534	24,142	12,053	5,722
Spain	4,034	4,766	4,211	966	—
Italy	11,472	1,972	1,377	—	—
Argentina	605	562	6,125	480	—
Other foreign countries	200	120	367	5,140	2
British Possessions..	316	536	371	1,385	2,328
Total	24,140	32,544	43,821	24,672	26,941
Value £	111,435	118,517	109,841	60,653	69,346

Imports of distilled glycerin into the U.K.

From	1920	1921	1922	1923	1924
	cwt.	cwt.	cwt.	cwt.	cwt.
Netherlands	2,119	3,762	4,246	3,506	1,075
Spain	692	—	—	—	—
Italy	6,823	—	—	—	—
U.S.A.	—	20	456	—	1
Other foreign countries	42	26	651	289	193
Total	9,676	3,808	5,363	3,795	1,269
Value £	£56,029	19,543	23,249	14,080	4,991

Exports of British crude glycerin from U.K.

To	1920	1921	1922	1923	1924
	cwt.	cwt.	cwt.	cwt.	cwt.
Germany	5,894	—	—	1,574	2,559
Netherlands	—	1,363	4,855	8,438	2,759
Belgium	5,052	—	90	31	35
France	2,258	100	—	—	1
Portuguese E. Africa	—	—	1,400	—	—
Italy	24	—	—	—	1
U.S.A.	106,295	10,317	2,028	15,378	47,184
Other foreign countries	2,447	80	95	158	182
Cape of Good Hope ..	42,121	32,770	9,728	43,073	9,407
Natal	—	—	—	—	2
Canada	8,130	—	1,000	2,276	—
Other British Possessions	692	627	49	1,264	3,247
Total	172,913	45,527	19,245	72,194	65,375
Value £	£727,342	194,563	61,659	182,750	175,528

Exports of British distilled glycerin from U.K.

To	1920	1921	1922	1923	1924
	cwt.	cwt.	cwt.	cwt.	cwt.
Sweden	1,057	—	388	624	512
Norway	10,066	57	733	2,709	4,645
Denmark	730	179	1,117	2,307	1,149
Belgium	4,137	212	1,337	2,454	3,186
France	3,703	101	246	299	201
Portuguese E. Africa	8,712	1,171	3,071	185	7,654
Spain	2,603	84	492	675	510
Italy	45	10	—	—	—
Egypt	164	105	339	431	176
China*	3,134	893	3,318	3,047	32,555
Japan	20,513	3,763	25,438	37,868	43,036
U.S.A.	35,567	13	—	125	14,179
Other foreign countries	5,365	863	2,262	6,140	6,939
Cape of Good Hope ..	3,677	164	683	2,811	2,296
Natal	19,002	9,605	793	1,061	942
Transvaal	10,437	15,071	10,266	16,869	34,356
British India	2,717	1,204	2,575	4,662	5,003
Hong Kong	1,411	2,461	3,028	2,897	2,098
Australia	3,658	20	116	1,071	33
Canada	53	1	5,007	1	13,557
Other British Possessions	443	1,512	966	1,817	2,633
Total	137,194	37,489	62,175	88,063	175,660
Value £	£484,794	234,410	265,094	341,334	670,043

* Excluding Hong Kong.

Re-exports of crude glycerin from U.K.

To	1920	1921	1922	1923	1924
	cwt.	cwt.	cwt.	cwt.	cwt.
Germany	—	—	—	1,171	2,174
Netherlands	—	—	560	724	899
U.S.A.	1,166	—	214	415	—
Other foreign countries	2	—	11	39	—
Cape of Good Hope ..	10,636	—	397	303	—
Other British Possessions	—	—	—	7	2
Total	11,804	—	1,182	2,659	3,075
Value £	£56,920	—	2,863	6,917	7,860

The production of glycerin in Belgium prior to the war was estimated at approximately 2,400 metric tons per annum, but it is now between 1,500 and 2,000 metric tons. Belgian consumption is estimated at 500 metric tons, of which about one-third is consumed by the explosives industry. Great Britain and Japan are the largest buyers, followed by France, Germany and the Netherlands, the latter country taking approximately 300 tons crude Belgian annually. As regards the Argentine, the production of crude glycerin has increased considerably since 1921, and almost equals the figure reached during the peak year of 1916. Exports are below those of pre-war years. The annual production of crude and distilled glycerin and its exportation, previous to the war, and since, as published by the Minister of Agriculture of Argentina, is shown in the following table :—

Years	Crude	Distilled	Exports
	kilos	kilos	kilos
1910	215,818	100,000	524,488
1913	288,263	100,000	544,935
1916	534,214	100,000	559,096
1921	295,858	103,706	141,216
1922	425,606	195,675	384,996
1923	522,614	205,740	*

The following figures relate to France, Germany, Italy, and the United States :—

France

	Total imports	Total exports
	kilos	kilos
1923	1,061,300 (356,600)	5,459,000 (4,809,600)
1924	620,800 (461,200)	5,236,600 (5,006,600)
1925	919,200 (433,900)	4,859,000 (4,393,100)

The figures in parentheses under imports give the amounts cleared through Customs for use in France. The figures in parentheses under exports give the amounts exported manufactured in France.

Germany

	Imports		Exports	
	Crude	Refined	Crude	Refined
	kilos	kilos	kilos	kilos
1923	786,800	79,600	5,100	299,500
1924	835,700	175,600	304,400	495,000
1925	570,800	174,300	1,016,100	1,928,300
Great Britain	35,600	—	—	—

Italy

	Imports		Exports	
	Crude	Refined	Crude	Refined
	kilos	kilos	kilos	kilos
1923	30,500	45,500	260,100	7,500
1924	281,000	47,100	65,600	14,700
1925	349,900	305,900	469,100	2,100

United States

	Imports	Exports
	lb.	lb.
1924	15,927,701	1,415,882
1925	21,292,301	1,367,191

* Not available.



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42 CANNON ST.
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AUGUST 28, 1926

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2.—MIDDLESEX (Suburban).—General Retail Business, with Kodak Agency; returns about £2,000 per annum at good prices; double-fronted shop; held on lease at moderate rental; price £1,250, or valuation terms entertained.

3.—WEST END.—Ready-money Business; returns for financial year just ended £1,651; net profit about £700; double-fronted shop, well fitted and stocked; net rent about £80 per annum; held on lease; price £1,250.

4.—LONDON, S.E.—Good-class Dispensing and Prescribing Business, with Post Office; returns average £1,365; gross profit, 34 per cent.; six-roomed house; new lease will be granted at £50 per annum; no near opposition; price £1,150.

5.—LONDON, W. (Distant Suburb).—Old-established Family, Retail and Dispensing Business; returns, about £2,000 per annum, with scope for increase; double-fronted shop, well stocked; living accommodation; held on lease; price, £1,600; £1,000 on entry and the balance by instalments.

6.—GOODMAYES.—General Retail and Dispensing Business; returns between £20 and £25 per week, increasing; lock-up shop, attractively fitted; good working stock; long lease; moderate rental; price £850, approximately the value of the stock and fixtures.

7.—HERTS (Borders of).—General Retail and N.H.I. Dispensing; returns between £20 and £25 per week, increasing; lock-up shop, with scope for extension; good house; very low rent; held on lease; price, £750.

8.—EASTERN COUNTY.—Very old-established Business, offering scope for increase under energetic management; returns last year, £2,600; heavy stock; large house, with ground at rear; garage, new lease will be granted; offers invited.

9.—SOUTH COAST (Seaside).—General Retail and Dispensing Business; returns, present rate, £28 weekly; single-fronted shop, well fitted and stocked; good house, newly decorated; electric light; garden; rent £45; rates £12; 19 years' lease; price about £900.

10.—MIDLANDS.—General Retail, with Wine and Spirit Licence; returns, present rate, £2,000 per annum; rent, £36; new lease will be granted; price to be arranged equitably.

11.—HOME COUNTY.—General Retail Business, with Kodak Agency, and very remunerative sideline; returns, £25 weekly under management, with scope for large increase; double-fronted corner shop; living accommodation; 21 years' lease; price, £475, the estimated value of stock and fixtures.

12.—SUSSEX COAST.—Cash Drug Store, offering scope to a qualified man; returns, under the management of a lady, £20 weekly; lock-up pharmacy, dispensary and garage; 21 years' lease; price, £350, approximately the value of stock and fixtures.

13.—CORNISH COAST.—Medium-class Business; Dispensing, Prescribing and Photographic; returns average £1,450, with scope for increase in the hands of a younger man; double-fronted shop, with good working stock; net rent, £28 per annum; held on lease; price £750.

14.—EAST MIDLANDS (Market Town).—Very old-established Business; returns, £3,500; net profit over £600; the books are kept by accountants and certified; terms, valuation of stock and fixtures, and sum for goodwill to be agreed; vendor is retiring after having held the business for over 40 years.

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1.—ULVERSTON.—Retail Dispensing Business; established 66 years; turnover £3,000 per annum; stock and fixtures valued at £850; good living accommodation; property is also for sale with Building Society mortgage; offers invited. (72)

2.—ALDERSHOT.—Old-established Herbalist and Druggists' Sundries Business; rent £94 per annum; returns £1,000 per annum; well fitted and good stock; good living accommodation; cash price for quick sale, £500. Write for further particulars and order to view. (73)

3.—BIRKENHEAD.—Old-established Family Retail and Dispensing Business; returns, about £2,000 p.a.; held on lease, 10 years to run; excellently fitted and well stocked; capable of great improvement under personal supervision; good house; strongly recommended. Write for further particulars and order to view. (49)

4.—LANCS.—Well-fitted, double-fronted shop in busy town; all cash; returns £800; N.H.I. average 400 per month; stock £250; Kodak Agency; Optical side average about £80; could be sold with or without this branch; purchaser would be taught; price £400 all at, or nearest offer. Further particulars will be supplied on application. (59)

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7.—LIVERPOOL.—Old-established high-class Dispensing and Family Business, with valuable Proprietary in connection therewith; returns over £2,000 at approximately 62% gross profit; premises are held on lease, of which 12 years is to run at a rental of £180 p.a., rising to £200, with possibility of renewal for further period. Full particulars will be sent on application. (51)

8.—YORKS.—Good-class Dispensing and Retail Business, in busy town; double-fronted shop, with house attached, in main road; returns, £35 p.w., all cash; stock about £700; Kodak Agency; price £850. Further particulars on application. (71)

9.—LONDON SUBURB.—Smart up-to-date Cash Drug Stores, East Ham; main road; prominent position; new double front; mahogany fittings; returns £30 p.w., which could be doubled in qualified hands; Kodak Agency; owner, vendor, will grant 42 years' lease; specially recommended; price £1,050. (64)

10.—CHESTERFIELD.—Old-established double-fronted shop, 3 warehouses, house 6 rooms and cellars; lease can be obtained; returns, £34 per week, practically all cash; stock, £700; fixtures, fittings and goodwill, £550; price for quick sale, £1,100. (65)

11.—STOCKPORT.—Splendid opportunity to acquire a Business in main shopping thoroughfare; premises on lease; 7 years to run; rent £80, including rates; turnover £1,000 p.a., which can be considerably increased by smart man; no living accommodation; stock and fixtures about £650. (67)

12.—BRADFORD.—Retail Cash Dispensing Business, in main shopping centre; frontage of five windows; large corner shop, doing good-class business; Kodak Agency; splendidly fitted in modern style; rent high, but reasonable for position; exceptional opportunity for a go-ahead pharmacist; offered at low price as owner's time is fully occupied by business in another city. (58)

13.—LONDON, S.E.—Cash Drug Stores in busy main road, thickly populated district; turnover last year £755, all cash; could be doubled in qualified hands; no serious opposition; good living accommodation; large garden; quick sale, £500, or near offer. Write for further particulars and order to view. (66)

14.—KIMBERLEY, NOTTS.—Retail Cash Business situated in good-class neighbourhood; returns £700; rent £13 13s. and rates; all fittings, fixtures and stock new; ill-health reason for disposal. Write for further particulars. (68)

15.—NORTHUMBERLAND.—Recently established Cash Pharmacy, with Kodak Agency; average takings £14 p.w., which can be considerably increased with energetic, qualified man; lock-up shop; rent 8s. per week; house attached; price for goodwill and fixtures, £275; stock to suit purchaser; offers invited. (56)

16.—MANCHESTER SUBURB.—Old-established Business in busy suburb; well fitted and stocked; corner position; good house; on lease; returns £700-£1,000, all cash; rent £50 p.a.; let off 14s. 6d. p.w.; price for quick sale £500 all at, or nearest offer. (74)

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4.—NORTH STAFFS.—Old-established light Cash Retail returns, £1,750; net profit, £462; low rent, on lease; house attached; well-fitted pharmacy, fully stocked; price £1,200, close offer.

5.—ESSEX (Popular Seaside Resort).—Good-class Light Retail with Kodak Agency; returns over £1,800, increasing; good profits; nice house and pharmacy; well stocked; price £1,350 for quick sale.

6.—DORSET COAST.—Good middle-class Cash Retail, on main road; present returns £25 weekly, can be increased; selling through ill-health; good stock; large house and garden; price £850.

7.—SOUTH COAST.—Modern well-fitted Pharmacy in rapidly growing district; returns £20 a week, under unqualified management; plenty of scope; lock-up shop; price £350 for quick sale.

8.—LONDON, S.W.—Profitable Cash Retail, under management returns over £1,500; gross profits 40 per cent.; fine opening for N.H.I.; low rent; good position; price £1,000, or near offer.

9.—EAST HAM.—Sound Cash Drug Stores in prominent position, main road; present returns £50 a week; can be much increased in qualified hands; house and garden; long lease; low rent; large attractive shop, modern fittings; price £1,050.

10.—GOLDER'S GREEN (Near).—Good-class Suburban Business; under indifferent management; present takings small; excellent prospects for a smart, energetic man; large, attractive double-fronted shop in unique position; offers invited.

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thickly populated district; newly fitted; large, clean stock; long
lease at very low rent; profits exceptionally good; a bargain at
£1,450; good reason for selling. 192/40, Office of this Paper.**BOURNEMOUTH.**—Drug Stores in rapidly developing district;
splendid chance for qualified man; no opposition; large
shop; living accommodation; main road; £300 all at; stamp.
Pugh & Co., Valuers, 242 Old Christchurch Road, Bournemouth.**HAMPSHIRE.**—For disposal, two Businesses; turnover £4,000
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Winchester.**HANTS VILLAGE.**—Unopposed Drug and Fancy Business,
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electric light plant; main road; returns £10 weekly; neglected,
but profitable; splendid opening for good Prescriber, N.H.I.,
Photos, Wireless or Agricultural; price £750; only cash buyers
need apply; stamped envelope. 191/26, Office of this Paper.**LONDON, N.**—Neglected lock-up Drug Stores for Sale; very
populous neighbourhood; scope for good trade (unopposed)
and opening for N.H.I.; rent 12s. 10d. week inclusive; price
only £35 a.a.; real bargain for energetic person. Further details
from "Advertiser," 3 Stibington Street, London, N.1.**LONDON SUBURB** (middle class).—Well-fitted and stocked
lock-up Pharmacy; long lease at moderate rental; returns
£20 to £25 weekly, increasing; price £750, or valuation of stock
and fixtures. 191/13, Office of this Paper.**LONDON** (Western Suburb).—Very attractive, good-class Light
Retail and Photo. Business in commanding position in
rapidly developing neighbourhood; doing over £50 per week
at good prices; Kodak Agency; excellent opportunity for Phar-
macist with limited capital, or Partnership would be entertained.
192/70, Office of this Paper.**MANCHESTER SUBURB.**—Modern Cash Pharmacy, tram
route; turnover £30 weekly; stock and fixtures £750; cash
offers wanted; Kodak Agency; property £1,000, or will let on
lease; district growing; no opposition; good living accommoda-
tion, with electric light and garage; shop could be converted to
lock-up; offered through ill-health only. 193/37, Office of this
Paper.**MID CHESHIRE.**—Owner retiring. An exceptional oppor-
tunity for acquiring a neglected Business which has done
over £2,000 a year; last year £1,200; price, value of stock and
fixtures, about £950, with a substantial discount to immediate
purchaser; Wine Licence; Ucal and Kodak Agencies; good open-
ing for Optics; rent and rates very low; large lock-up shop, with
ample storage accommodation; electric light; first reasonable
offer will be accepted. 191/27, Office of this Paper.**NEWCASTLE-ON-TYNE.**—Old-established Business in main
thoroughfare; beautifully fitted and well stocked; owner
buying larger concern, is prepared to dispose of very cheaply;
will accept £240 and stock at valuation; willing to reduce stock
to purchaser's requirements; takings at present £1,500, approxi-
mately. "Chemist," 14 Forsyth Road, Newcastle-on-Tyne.**NORTH WALES** (busy industrial town).—Old-established Busi-
ness for immediate disposal; double-fronted shop; well fitted
and stocked; good living accommodation; Welsh an advantage;
scope for increase; premises may be purchased or taken on lease.
For particulars apply 190/25, Office of this Paper.**PENRITH, CUMBERLAND.**—For immediate Sale owing to
the death of the owner, Mr. Thomas Edmondson, a very
successful old-established (1726) Chemist and Druggist, Seeds-
man and Agriculturist Business, with large turnover; being
owner of premises can give long lease; exceptional opportunity.
Executor, T. Scott, Corn Market, Penrith.**SEASIDE RESORT, YORKSHIRE.**—Old-established Business,
with Kodak Agency; large shop; well fitted and stocked;
very profitable; held on lease; expenses low; returns last four
weeks nearly £40 per week; scope for considerable increase;
price £900. 192/28, Office of this Paper.**£80 SECURES** possession of Drug Store in busy working-
class shopping centre, London, S.W.; present turnover
about £550 under female management; big scope for N.H.I.
and Prescribing; suit energetic Pharmacist with personality;
price, fixtures, £80; small stock at valuation; well worth inspec-
tion. 192/7, Office of this Paper.**£150 DOWN**, balance by arrangement; near Chesterfield;
great bargain; Cash Chemist's; single-handed busi-
ness; country; 6,000 population around; must sell; going
concern; stock, fixtures worth about £400; Kodak, N.H.I., Pre-
scribing; no goodwill; no opposition; rent 10s. weekly; store-
room; returns should double after strike ended; cash offer con-
sidered. "Infirm," 192/39, Office of this Paper.**CANINE and Veterinary Medicine; Limited Company;** valu-
able practice and mail-order clientele, stock, literature and
formulas; controlling interest £500. 193/12, Office of this Paper.**NEGLECTED** Country Business in large village (Cambridge-
shire); double-fronted shop, good house, separate entrance,
stables, garden, fruit trees, etc.; new lease will be granted at
£50 per annum; vendor, who is over 70, has done very little
business of recent years; previously the business has been pros-
perous; at present there is little stock; £150 will be accepted
for immediate sale (estimated value of fittings and utensils).
191/32, Office of this Paper.**PROFITABLE** small West-End Business for Sale at low price;
splendid scope for keen man speaking one or two foreign
languages. 190/36, Office of this Paper.**SPLENDID** opening for qualified Chemist, recently opened
Drug Store in a rapidly developing Leeds suburb; nearest
opposition ½ mile. Further particulars apply 189/37, Office of
this Paper.**BUSINESSES WANTED.****GOOD** Business (Wholesale or Retail) required in North of
England and worth about £10,000, inclusive of stock, fix-
tures etc.; preference will be given to one in the Manchester
district. J. Needham & Co., Chartered Accountants, 3 York
Street, Manchester.**MESSRS. BERDOE & FISH** are in immediate want of Busi-
nesses, and vendors will find it to their advantage to cor-
respond with us, we having at the present time a large number
of genuine cash buyers with from £700 to £4,000 at command,
and ready to take over at once; private registers kept, and strict
privacy assured. Valuation Offices: 41 Argyle Square, King's
Cross, W.C.1.**AGENCIES.****AGENT** wanted, calling on best Retail Chemists and Stores
in provinces, by manufacturers of Powder Puffs; wide and
attractive range; medium to best trade; commission only.
189/1, Office of this Paper.**LITTLE & JONES**, 55 Middle Abbey Street, Dublin, Manufac-
turers' Agents, are open to accept Sole Representative for
the Irish Free State. Have excellent offices and showrooms in
central position; good, live connection; country districts worked
by car; banker and trade references can be given.**REPRESENTATIVE**, sound connection, Lancs, Yorks, Mid-
lands and N. Wales, carrying Tablets and Fine Chemicals,
desires one more Agency; in London 30th for interviews. 88/934,
Office of this Paper.**SWISS** Druggist, for many years introduced to the Swiss
clientèle, seeks a firm to represent in this line. Write
under No. T. 25271 L, to Publicitas, Lausanne, Switzerland.**PARTNERSHIP.****VACANCY** occurs for Partner in an old-established high-class
Dispensing Business on the South Coast; age about 30;
£1,500 required; strict confidence will be observed. 191/25,
Office of this Paper.

PATENTS.

"AN IMPROVED TOOTH-BRUSH."—The owners of British Patent No. 201,083 desire to dispose of the same, or would enter into working arrangements with a firm likely to be interested. Particulars may be obtained from Technical Records, Ltd., of 59-60 Lincoln's Inn Fields, London, W.C.2.

PREMISES TO LET.

BRIDGE STREET, Newport.—Shop Premises to Let, with living accommodation, suitable for Chemist; will accept £100 premium for present lease, six years to complete, or would consider Partnership with Chemist; excellent opportunity. H. 1500, "South Wales Argus," Newport.

STOKE-ON-TRENT.—Lock-up Shop; latest up-to-date equipment; especially suitable for Chemist; no ingoing; rent £100-£150, on lease. Apply Majestic Cinema, Stoke-on-Trent.

SUTTON, ISLE OF ELY.—To Let, excellent modern Shop and large House, with good garden and out premises; has been Chemist's for last 50 years; vacant September 29; splendid opportunity for qualified man; large village; only Chemist in district; Wine Licence; rent £50; lease granted. For particulars apply Boulton, 29 Clarence Road, Norwich.

SHOP to Let, as Chemist's, in main road, East End, near S City, in the house of Doctor with considerable Panel practice; excellent front, double windows, etc. P.C.B. 37/34, Office of this Paper.

SHOP, lock-up; village, 30 miles out; main London road; rent 15s. week; no Chemist within 3 miles; badly needed; high-class school in vicinity; building sites adjacent; prospects future development; suit Dispenser requiring rest and prepared to await progress; electric light; company water. 190/22, Office of this Paper.

PREMISES FOR DISPOSAL.

OXFORD.—For sale, with vacant possession, well-situated corner Business Premises, comprising large shop with excellent window accommodation, office, workroom and store rooms; excellent living accommodation; busy thoroughfare; long leasehold at moderate ground rent. For price and full particulars apply to Messrs. Buckell & Ballard, Estate Agents, 16 Cornmarket Street, Oxford.

FOR SALE.

CHEMIST'S and Druggist's Stock and Fittings for Sale owing to death of proprietor. Full particulars from Ferme, Ferme & Williamson, Solicitors, Haddington.

OVERSTOCKED.—Pulv. Gum Trag. Quar., pure, 7-lb. lots, 8s. 6d. per lb.; offers for 56 lbs. 10 lb. destill. Oil of Limes, 21s. per lb.; 8 lb. Lemongrass Oil, 6s. per lb. Bai, 9 Gore Street, Piccadilly, Manchester.

TENDERS INVITED.

SEVERALLS MENTAL HOSPITAL, COLCHESTER.

THE Committee of Visitors invite Tenders for the supply of Drugs for the three months ending 31st December, 1926.

For Form of Tender apply, enclosing stamped, addressed envelope, to the Clerk of the Hospital, Severalls Mental Hospital, Colchester.

Sealed Tenders must be received not later than Saturday, 11th September, 1926, addressed to the Committee of Visitors, Severalls Mental Hospital, Colchester.

The Committee of Visitors do not bind themselves to accept the lowest or any Tender.

SITUATIONS OPEN.

RETAIL.

[HOME.] "

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

BOGNOR, SUSSEX.—Wanted, about September 3, qualified Assistant (male); single; outdoors. Please give full particulars in first letter. C. T. Cooper, Steyne Pharmacy, Bognor.

BRIGHTON.—Wanted for end of August, young qualified unmarried male Assistant for high-class Retail and Dispensing business. Please give full particulars in first letter and enclose photo. Parris & Grepping, 105 Church Road, Hove.

COUNTY BOROUGH OF WALSALL. SECRETARY-DISPENSER.

APPLICATIONS are invited from qualified Dispensers (male or female) for the post of Secretary-Dispenser at the Tuberculosis Dispensary.

A knowledge of typewriting and book-keeping is essential. Experience in laboratory methods would be considered an additional qualification.

The person appointed will be required, (1) to act as Secretary to the Tuberculosis After-Care Committee, and (2) to pass a Medical Examination and contribute to the Council's Superannuation Scheme.

Salary £150, rising by £5 per annum to £175.

Terms and conditions of the appointment may be obtained from the undersigned, to whom applications should be sent not later than September 13th.

JAMES A. M. CLARK, M.D.,

Medical Officer of Health,

Council House, Walsall.

July 29th, 1926.

CLEVEDON (Somerset).—Junior Assistant (outdoors) in good-class Dispensing Business. Full particulars to J. H. Shepherd, Pharmaceutical Chemist, 16 Hill Road, Clevedon, Som.

DEVON.—End of September; smart Qualified Assistant; good Salesman and Window-dresser; able to smarten up branch shop; permanency and good salary to the right man; age not over 30. Full particulars, photo, 192/14, Office of this Paper.

ILFORD (near).—Wanted, immediately, Junior or Improver for good-class business; time for study given; state age, salary (outdoors), and experience; enclose photo, to be returned. P.C.B. 38/10, Office of this Paper.

LIVERPOOL.—Qualified lady for small private company in working-class district; Dispensing only if desired. Apply, stating salary (moderate to commence), age, and full particulars, to 191/17, Office of this Paper.

LONDON, E.2.—Qualified Assistant (two kept); middle-class Retail with N.H.I.; flat provided over shop, or outdoor assistant entertained. State salary expected in either case; give full particulars, experience, names of references, age, when disengaged. "Cinchona," 193/9, Office of this Paper.

LONDON, E.C.—Qualified Assistant, with knowledge of Photography, required. State age and details of experience. The Secretary, Shadforth Prescription Service, Ltd., 49 King William Street, E.C.4.

LONDON, N.W.—Manager wanted, also qualified Assistant view to managership. Apply, with full particulars of experience, etc., stating age, salary required, and when at liberty, or by personal application, to 114 Fortess Road, Kentish Town, N.W.5.

LONDON, N.W.—Capable Assistant (lady or gentleman) for light Retail Business; qualified preferred, but not essential; hours 9 a.m. to 8 p.m., Thursday 1 p.m., Saturday 9 p.m., alternate Sunday evenings 6 to 8 p.m.; tea provided. Full particulars, salary required and when disengaged, to 193/19, Office of this Paper.

LONDON, S.E.—Wanted, about October 1, a Junior Assistant, outdoors; good Dispensing and Counter experience, knowledge of Photography. Apply by letter, with full particulars, age, height, experience, salary required and when disengaged, to Rumsey & Son, 535 Lordship Lane, S.E.21.

LONDON, S.W. SUBURB.—Wanted, for September 27, Junior Assistant (male) for good-class Dispensing, Family and Photographic business. Please give full particulars, stating age, height, experience, and salary to 192/22, Office of this Paper.

LONDON, S.W.—Wanted, gentlemanly qualified Assistant, with knowledge of Photography; must be good Counterman and Dispenser. State age, height, experience, references, and salary required. Parson C. Baker, Ltd., 205 Victoria Street, S.W.1.

LONDON, W.—Junior Assistant; good-class experience; willing, smart and energetic; good appearance and address; permanency; outdoors; qualified man preferred. Apply, stating age, height, experience, salary required, enclose photo (returnable), Cofman's Pharmacy, 129 Baker Street, W.1.

LONDON, W.1.—Qualified Assistant (male) required for Dispensing and Counter; also educated youth as Apprentice. Apply, with usual particulars, to 185/18, Office of this Paper.

MANCHESTER.—Qualified lady Assistant required; must be an experienced Dispenser and used to quick cash trade in middle-class business; reasonable hours and no Sunday duty. Please state recent experience, actual salary required, and whether an interview can be arranged. 191/28, Office of this Paper.

RICHMOND, SURREY.—Junior, unqualified, outdoor, no extra duty, Dispensing and Light Retail, Photographic experience essential, for September 20. Apply, giving usual particulars and salary required, to Poole, 84 Sheen Road, Richmond.

SOUTH STAFFS.—Qualified Manager for small Branch to take sole charge (one with view to purchase preferred). Apply, stating age, salary, etc., to W. H. Hodge, Chemist, Ocker Hill, Tipton. House provided.

£180.—LONDON.—Lady required for General Retail and Dispensing; give references, age, experience, and when free to start duty; Minor qualification. 192/23, Office of this Paper.

A CAPABLE and energetic Assistant required, about September 20, for a good-class country business; Dispensing, with knowledge of Photography (D. and P.). Please give age, height, experience and salary required, and state when at liberty. D. Lewis, Pharmacist, Tisbury, Salisbury.

ASSISTANT; outdoors; quick Retail, N.H.I. Full particulars, Tremlett, Chemist, Fratton Bridge, Portsmouth.

ASSISTANT, experienced, required, October 1; brisk trade and good Dispenser; give full particulars first letter. Moxham, Chemist, Portswood, Southampton.

ASSISTANT wanted at once, used to N.H.I. Dispensing, sale of Photographic Goods and Window-dressing. Apply any evening between 6 and 8, or Sunday, before 1. D. Covill, M.P.S., 167 Dalston Lane, Hackney.

AT once; Unqualified; about 25-30; used to a good-class business, well up in Dispensing and Photography. State full particulars in first letter. Chater, Chemists, Watford.

BRANCH Inspector wanted for Retail Chemist's shops; liberal remuneration. Kindly state experience, age, and usual particulars. 191/20, Office of this Paper.

COMPETENT qualified Dispenser for high-class business, of good appearance and address, and accustomed to quick and accurate work; permanency. Please give full particulars, experience and salary required in first letter. Davies, John & Aspell, Bath.

CONGENIAL job for retired Chemist in nice part, S.W. district; short daily duty; full qualifications required; state remuneration desired, etc. Apply P.C.B. 38/27, Office of this Paper.

COUNTERMAN and Window-dresser; qualified or unqualified; must have had good all-round experience; outdoor. Apply, with photo, stating age, salary and usual particulars, to Chave & Jackson, Ltd., Hereford.

GENTLEMANLY Junior Assistant, unqualified, wanted, October 4, for Retail and Dispensing business. Apply, stating age, height, salary required, and references, to G. Henley, Lyme Regis, Dorset.

GOOD Junior or Improver wanted for good-class business. Apply, with full particulars, references, salary required (outdoors), and photo if possible, to Walker & Harris, Ltd., Sun Street, Canterbury, Kent.

IMPROVER or Junior (September) for mixed business in a Staffs market town; beautiful country; active and reliable worker; able to develop and print well. Write in first instance, stating salary required, references, photo, to Blades, Chemist, Llandudno.

JUNIOR (male) Assistant wanted on September 27 for good-class country business; Front Counter and Dispensing. Apply, with fullest particulars, photo if possible, age, salary required, etc., to A. F. Corfe, Managing Director, Corfe & Son, Ltd., Chemists, Maidstone.

JUNIOR or Improver; must be experienced in first-class Dispensing. Apply, with particulars of experience, age, salary, etc., to J. E. Whitaker, Pharmacist, 57 Cold Bath Road, Harrogate.

JUNIOR Assistant, unqualified, lady or gent., one with two or three years' Counter and Dispensing experience, for good-class West Country business; sound references. Apply, giving full particulars, to 190/2, Office of this Paper.

JUNIOR Assistant or Improver, Manchester suburb, required for September 20; Light Retail. State age, height, salary required, etc. 191/18, Office of this Paper.

JUNIOR Assistant (male); unqualified; outdoors; good Counter-man and Window-dresser. Apply, stating age, experience, salary required, and enclosing photograph, to Glaisyer & Kemp, Brighton.

LADY Assistant (outdoors) for Counter, with good-class Retail experience; good Window-dresser. Full particulars as to age, height, experience and salary required to W. H. Hampton, 47 Northgate Street, Gloucester

LOCUM wanted from September 13 for one week. Apply C. Goode, 11 King Street, Twickenham.

LOCUM, qualified, required for following dates: September 9, 10, 17, 18. Apply L. Levine, 7 Middle Hillgate, Stockport.

LOCUM Tenens Dispensing Chemist (male) required for four weeks; £5 5s. a week (no emolments); must hold Royal Pharmaceutical Society's qualifications. Apply at once to Medical Superintendent, Colney Hatch Mental Hospital, New Southgate, N.11. Canvassing disqualifies.

LOCUM required, Junior, lady or gentleman, immediately, for four weeks; Counter and Window-dressing; easy berth; indoors or outdoors. Particulars and salary required to 193/15; Office of this Paper.

LOCUM, unqualified, good Dispenser, required September 6 to 18 inclusive. State experience and salary required to J. E. Booth, Chemist, Farnborough Road, North Farnborough, Hants.

LOCUM, lady or gent., for Dispensing only, from middle of September for two or three weeks. E. Butterworth, Central Pharmacy, Ross, Herefordshire.

MANAGER, qualified, required for good-class suburban Retail Dispensing Business in North London district; Window-dressing, Photography and Salesmanship essential. Apply by letter, with full particulars, to 88/941, Office of this Paper.

PART-TIME.—Assistant, N.H.I., Wednesday, Thursday, Sunday, 6-8 p.m. Hughes' Pharmacy, 89 Upper North Street, Poplar, E.14.

QUALIFIED Male Assistant (or experienced unqualified) required shortly; must be good, reliable Dispenser and used to quick N.H.I. work. State salary (outdoors), age and usual particulars. Wood, 351 High Street, West Bromwich.

QUALIFIED Chemist's Assistant required shortly; comfortable position; no Sunday duty; half-day weekly; market town; healthy; easy hours; Welsh man if possible, but not essential; single; abstainer; live out. State salary required and when at liberty; permanency. 88/925, Office of this Paper.

QUALIFIED Assistant required; accurate Dispenser, good at Counter and Window-dressing. Apply, stating salary required and giving full particulars and references, to Jackson, 645 Fulham Road, S.W.6.

QUALIFIED Manager, not over 40, required, to commence September 20; old-established business doing N.H.I. Dispensing; assistant kept; Sunday duty one in three. Also an Unqualified Assistant required; must be good Salesman, Window-dresser and quick Dispenser. Apply, stating full particulars and salary required, Austins, Limited, Bermondsey Street, S.E.1.

QUALIFIED Branch Manager (young) required. Full particulars and salary required, Murray & McConachie, Ltd., City Road, Winchester, Hants.

QUALIFIED Assistant for East London; working-class business; reliable Dispenser and used to quick Counter and N.H.I. work. State salary (outdoors), age and when disengaged to 192/11, Office of this Paper.

QUALIFIED Manager required for London branch; quick cash, N.H.I., and Photography; good prospects for suitable man. 191/6, Office of this Paper.

SMART Junior or Improver wanted, lady or gentleman; used to brisk Counter trade and N.H.I. Apply, stating full particulars, age, salary, references and when at liberty. Latewards, Ltd., 389 Ashton New Road, Manchester.

SURGICAL Appliance Business in the Provinces.—Young lady as Ladies' Fitter; accustomed to sales preferred; reliable references indispensable. State age last birthday and full particulars, in confidence. 194/2, Office of this Paper.

TANNER & CO., High Cross Pharmacy, Tottenham, require a Junior unqualified Assistant for branch immediately, and an unqualified Senior for main shop at end of September. Please give full particulars as to age, salary, etc., in first letter.

UNQUALIFIED Junior or Improver for Dispensing and Stock Packing. Prebble & Bone, Chemists, Chislehurst, Kent.

UNQUALIFIED Assistant required; capable Window-dresser, knowledge of Photography, good Salesman of gentlemanly appearance. Apply by letter, with full particulars, to 88/942, Office of this Paper.

WANTED, Dispenser to a Doctor in the Docks district of far East End; hours 9 to 12 o'clock mornings, 6 to 9.30 o'clock evenings, except Sunday and Thursday evenings. State terms to 191/16, Office of this Paper.

WANTED at once, qualified Assistant; suit lady; easy hours; no Sunday duty; for small country town, Somerset. Reply, stating wages and when at liberty, 185/21, Office of this Paper.

WANTED by Doctor, London, N.E. (Panel and Private practice), male Dispenser. Apply, stating age, salary, with copies of testimonials, which will not be returned. Apply 88/939, Office of this Paper.

WANTED, shortly, qualified Manager for country business; comfortable post and easy hours; salary offered £4 10s. Apply "Halifax," 193/40, Office of this Paper.

WANTED, end September, Dispenser; must be used to good-class business. State age, experience, and salary required. Adams & Son, Pharmaceutical Chemists, Shrewsbury.

WANTED, qualified Assistant to take charge of Dispensing and assist at Counter; good-class trade; short hours. Apply, stating experience, salary required, when disengaged, and usual particulars, to Gradidge, Pharmacist, Andover.

WHOLESALE.

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

A LONDON firm of Export Druggists require the services of a young, energetic and capable man to represent them amongst Merchant Shippers; only those with a successful travelling record and thoroughly familiar with the export trade need apply. State age and full particulars to 88/937, Office of this Paper.

A DVERTISER, splendid connection Yorkshire Chemists, Grocers, and high-class Hairdressers, requires to represent well-known Toilet or Soap House; copies of references and particulars past work in first letter. 191/30, Office of this Paper.

LANCASHIRE firm of Manufacturing Chemists require the services of two experienced Representatives; only those with a real live connection need apply; salary, with commission, offered according to their capacity to influence business; Drugs, Galenicals, Sundries and Specialities. We require men who can do at least a turnover of £500 per month. 193/37, Office of this Paper.

LONDON Representative, with sound connection amongst Chemists, required by well-known Manufacturing Chemists; full particulars, in confidence, first letter. Position for Junior Provincial Representative, with some travelling experience, shortly available. Write P.C.B. 38/8, Office of this Paper.

QUALIFIED Chemist, with aptitude for literary work or experience in advertising, required by London firm of Manufacturing Chemists. State age, experience, and salary required. 88/935, Office of this Paper.

REPRESENTATIVES required by well-known firm to carry a unique Toilet Cream on commission only; must be active, energetic, and with live connection; liberal terms and good sales backing; replies should state territory covered and give references. E. T. Pearson & Co., Ltd., 35 Gordon Square, London, W.C.1.

REPRESENTATIVE, calling upon Chemists, Hairdressers and Stores, required to sell well-known Toilet article on commission in Midland Counties. Apply, giving full particulars of present articles carried and areas covered. 88/936, Office of this Paper.

TRAVELLER required to call on Chemists, Doctors and Institutions, by North of England firm; established ground. Write, with fullest particulars, and photo if possible, to 192/15, Office of this Paper.

WANTED, experienced Book-keeper, either sex, not under 25, by firm of Manufacturing Chemists; consideration only given to applicants having good previous experience; quite accurate and neat writing essential; to work under head book-keeper, but must be able to carry on without assistance. 88/938, Office of this Paper.

YOUNG Lady required by Wholesale, Patent and Sundry House; able to take orders over telephone. State experience and salary required. P.C.B. 38/14, Office of this Paper.

[COLONIAL, INDIAN AND FOREIGN.]

BRITISH EAST AFRICA.—Wanted, qualified Assistant, age about 28; single; first-class experience and references; three years' engagement; salary £30, £35 and £40 per month; second class passage paid out and home; to sail middle of September. Apply Messrs. John Bell, Hills & Lucas, Ltd., "Oxford Works," Tower Bridge Road, S.E.1.

SITUATIONS WANTED.

RETAIL.

[HOME.]

2s. for 18 words or less; 6d. for every additional 10 words or less, prepaid.

A.A.A.—LOCUM; abstainer; take entire charge; vacant September 18 onward; reasonable remuneration. "Pharmacist," c/o Lofthouse & Saltmer, Ltd., Chemists, Hnh.

A.A.A.—Experienced Assistant open for engagement early in September; Dispensing, Counter, Kodak, Photography, Window-dressing; age 33 years; height 5 ft. 7 in.; well recommended; abstainer. "Chemist," 10 St. Mildred's Road, Westgate-on-Sea, Kent.

A CAPABLE, qualified man; disengaged from September 6; permanency or Locum. "Chemist," 85 Lancaster Road, Leytonstone, E.11.

A S Locum or permanency; good references and experience; moderate terms; disengaged. P.C.B., 38/28, Office of this Paper.

A S Locum or Emergency Relief; Drug House record; capable and used to full responsibility; London or suburbs. Wire or write "Reliable," 229 Sumner Road, Peckham, S.E.

A S Manager or Assistant; qualified; Section C of F.B.O.A. to get; excellent experience and references; free when required; South-West of England preferred. 193/25, Office of this Paper.

A SSISTANT; experienced; middle-aged; unregistered; three years present berth, 12 years former one. Ferrar, Hawthorn Villa, Cusop, Hay, Hereford.

A SSISTANT, 22; 8 years' experience, in Harrogate, Dispensing, Counter, Photographic (also practical) and Window-dressing; has had Minor Course; passed Part I. Walker, 175 King's Road, Harrogate.

A SSISTANT; unqualified; disengaged; middle-aged; all-round experience; moderate wage; abstainer. W. J. Jewell, 3 Hollydale Road, Peckham, S.E.15.

A SSISTANT, 25, qualified, good references, desires post in or near Bristol. 192/17, Office of this Paper.

A SSISTANT or Stock-keeper; unqualified; Dispenser and Prescriber; very moderate salary to commence; West-End experience; accustomed to take charge; disengaged; week-end. "Statim," 390 Clapham Road, S.W.9.

A SSISTANT; experienced; Dispensing, Counter, Photographic; mid-aged; single; unqualified. "Statim," c/o Miss Pickles, Wesley Street, Kirton Lindsey, Lincs.

A SSISTANT requires situation; over 10 years' excellent experience, including Dispensing, Counter, Photographic and Window-dressing, etc.; Yorkshire or North Midlands preferred. "A. G.," 50 Keighley Road, Skipton, Yorkshire.

A SSISTANT, 19, requires post as Junior; Dispensing, Counter, etc.; Nottingham or district preferred. 190/31, Office of this Paper.

A LADY, 24, unqualified, desires post; 8 years' good-class Dispensing, Counter, Photographic experience; thoroughly competent; reliable; able take charge; splendid references. "Aspirin," 16 Willow St., London, E.1.

A T liberty September 6; unqualified Assistant; 40; Locum, permanent or part-time; competent all branches. "Locum," 10 North Pole Road, W.10.

DISENGAGED September 8; male; Pharmacist; experienced; Locum or permanency. "Pharmacist," 67 Western Road, Ealing, W.5.

DISPENSER (Hall), experienced. Qualified lady, seeks post preferably in London; permanency immediately; Locum from mid-September. Miss Flint, 38 Woodland Gardens, Muswell Hill, London, N.10.

ELDERLY, qualified Chemist; town and country experience; any capacity; moderate salary. "R.," 29 Ashley Hill, Bristol.

JUNIOR, 20, 4 years' experience, Dispensing, Conter, seeks situation; anxious to attend recognised evening classes. Write 193/35, Office of this Paper.

JUNIOR Assistant seeks position in good-class Dispensing and Light Retail Pharmacy; permanency required; Liverpool, Manchester or North Wales districts preferred; good references; salary £2 10s. to £2 15s.; referred Pharmacy; willing; conscientious. Griffiths, Cyprus House, Squires Walk, Wednesbury, Staffs.

LADY Dispenser (Hall) requires post; 8 years' experience with Doctors and in Hospital; knowledge Shorthand, Typing; good references. 178/23, Office of this Paper.

LADY Dispenser (Hall) requires permanency, anywhere; East End preferred; excellent experience with Doctors and Hospital. 65 Mayfair Avenue, Ilford.

LADY seeks part-time employment; evenings or week-ends; 6 years' Counter experience (no Dispensing). M. Hoddinott, 2 Harder's Road, Peckham, S.E.15.

LADY; tall; 19; four years' experience, Counter and Stock; no Dispensing; permanent; London district. Page, 24 East Hill, Wandsworth.

LOCUM or otherwise; competent, middle-aged man; unqualified; exceptional all-round experience; disengaged. Wire, if urgent, "R.", 10 Foreign Street, S.E.5.

LOCUM—Having recently disposed of own business, am prepared to take Locum Tenens duties; any period. Craven, 12 Rose Bank, Rawtenstall, Lancs.

LOCUM; available at once; middle-age; well recommended; active, capable. "H. F.", "Rutland," Biggin Hill, Kent.

LOCUM or permanent; Managership; qualified; abstainer; disengaged September 4. Evans, 156 Portland Road, S.E.25.

LOCUM; qualified; F.S.M.C.; after September 18, free one week, any dates. "C.", c/o Jesse Sheardown, "The Globe," Mablethorpe.

LOCUM; qualified; free August 30; experienced. "Chemist," 32 Fairmount Road, Brixton Hill, S.W.

LOCUM; liberty September 6 or 7; just out own business; middle-aged; abstainer; good references; sound experience all departments. "Carte," 156 Town Street, Rodley, Leeds.

MANAGER; qualified; 35; married; all-round experience, Salesmanship, Window-dressing and Display, Photography; London, W., preferred; disengaged shortly. 192/5, Office of this Paper.

MANAGER, 36, married, wide experience town, country and seaside, desires position where hard work is needed, appreciated, and paid for; living accommodation necessary; accustomed Photography, Toilet, Veterinary, Display Work; free 14 days. "Rhei," 13 Alleyne Grove, Erdington, Birmingham.

M.P.S., 30, seeks change; W. or S.W. London preferred; thoroughly experienced; Counter, Dispensing, Window-dressing and Prescribing; reliable; Scot. "Acumen," 8 Chesham Road, Kingston, Surrey.

M.P.S., first-class all-round experience, seeks position as 193/6, Office of this Paper.

M.P.S., 33; 5 ft. 11½ in.; experienced Retail; Manager or Assistant; interview if required; disengaged to suit requirements. Apply 192/32, Office of this Paper.

M.P.S., Locum, Manager; experienced; London, provinces or country; tall; worker; disengaged September 12; excellent references. "Beta," 192/33, Office of this Paper.

PART-TIME—Student, returning to College for Part II only, seeks evenings and/or week-end post in London, W., S.W. preferred, from October 11; 15 years' London experience; excellent references. 190/23, Office of this Paper.

PHARMACIST desires Managership; temporary or permanent; good Prescriber; disengaged October 4. Fergus, c/o Clissold, 25 Chepstow Place, London, W.

QUALIFIED Manager (married) for Branch in good industrial district; mid-September or thereabouts; good recent reference essential; comfortable house. Sangster, Chemist, Slough, Bucks.

QUALIFIED, 25, disengaged in three weeks, good all-round experience, desires permanency; management or otherwise. "Bismuth," 16 Stockwell Park Road, S.W.9.

QUALIFIED, 24, 6 years' experience, Salesman, capable, confident, desires change; London or South of England preferred. 191/7, Office of this Paper.

QUALIFIED Chemist, married, age 25 years, requires position as Representative in Midlands. Mason, 113 Standhill Road, Nottingham.

QUALIFIED, 29, desires post as Manager or First Assistant; best West-End and provincial experience; free September 20. 191/12, Office of this Paper.

QUALIFIED (27) desires good-class situation, West End preferably; able to take charge; excellent all-round experience; smart and efficient Salesman. Evans, 23 Wellington Street, Slough.

RELIEF or permanency; good references; moderate salary; experienced Dispenser; London. "L.", 7 Roslin Terrace, Acton, W.

SOUTHBEND or District.—Assistant, 22, passed Part I, desires part-time engagement. "Salol," 43 Warrior Square, Southend-on-Sea.

SUCCESSION—Manager, view succession, small neglected business, London or South Coast. "Chemist," 38 St. Lawrence Road, W.10.

UNQUALIFIED Assistant, lady (23), 9 years' same situation, desires change; all-round experience; capable. 190/20, Office of this Paper.

YOUNG lady; qualified; 4 years' experience; used to quick trade; Counter work preferred; free September 13. Apply "Acetone," 41 High Street, West Norwood, London, S.E.27.

WHOLESALE.

ADVERTISER, tactful Salesman, good appearance and address, wishes to represent good firm; expenses and commission, or agency for standard lines on good terms. "South," 6 Compton Road, Brighton.

ADVERTISER, retired Chemist and Druggist, home and Colonial experience in Wholesale, Retail and Hospital work, wishes to represent Wholesale Drug or Sundry House; Surrey preferred. Grant, 144 Acre Road, Kingston, Surrey.

EXPERIENCED Representative; first-class connection Chemists, Hairdressers, London, provinces; 15 years present situation; disengaged August 30. Apply "F.", 2 Pierpoint Road, Acton, W.3.

EXPERIENCED Representative requires position; excellent connection in North of England, Doctors, Chemists and Institutions; good knowledge of Organo Therapy; many years with first-class manufacturing chemists; disengaged August 30. Replies 190/3, Office of this Paper.

MAN aged 19, had 4 years in Laboratory of Soap and Perfumery Manufacturer; good worker. L. Gatehouse, 5 Brettell Street, London, S.E.17.

QUALIFIED Chemist requires position of control in Wholesale Company; experienced in propaganda work amongst Chemists and Doctors. "Ajax," 194/1, Office of this Paper.

REPRESENTATIVE, wide experience, connections London Sundriesmen, leading Chemists and Hairdressers, also knowledge Markets, Coal Tar Dyes and Essences, University education, seeks appointment with some reputable and progressive house. P.C.B. 38/13, Office of this Paper.

SALESMAN, 27, Public School education, has good berth, but desires a better one; personal connection Manufacturers and Wholesalers, London and provinces; experienced selling to retail and medical profession; possesses personality, is of the right type and stamp, reliable and adaptable. Firms of repute requiring a man who likes spade work and who is capable of taking entire charge of sales department are invited to correspond. P.C.B. 38/11; Office of this Paper.

YOUNG Commercial Traveller, with live connection among Chemists, high-class Hairdressers and Stores; own car; disengaged September 1; can handle successfully Toilet Soaps, Perfumery or any article that appeals. Write Box 259, Hart & Co., 6 Arundel Street, Strand, W.C.2.

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